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Volume 6 No. 11 November 1991
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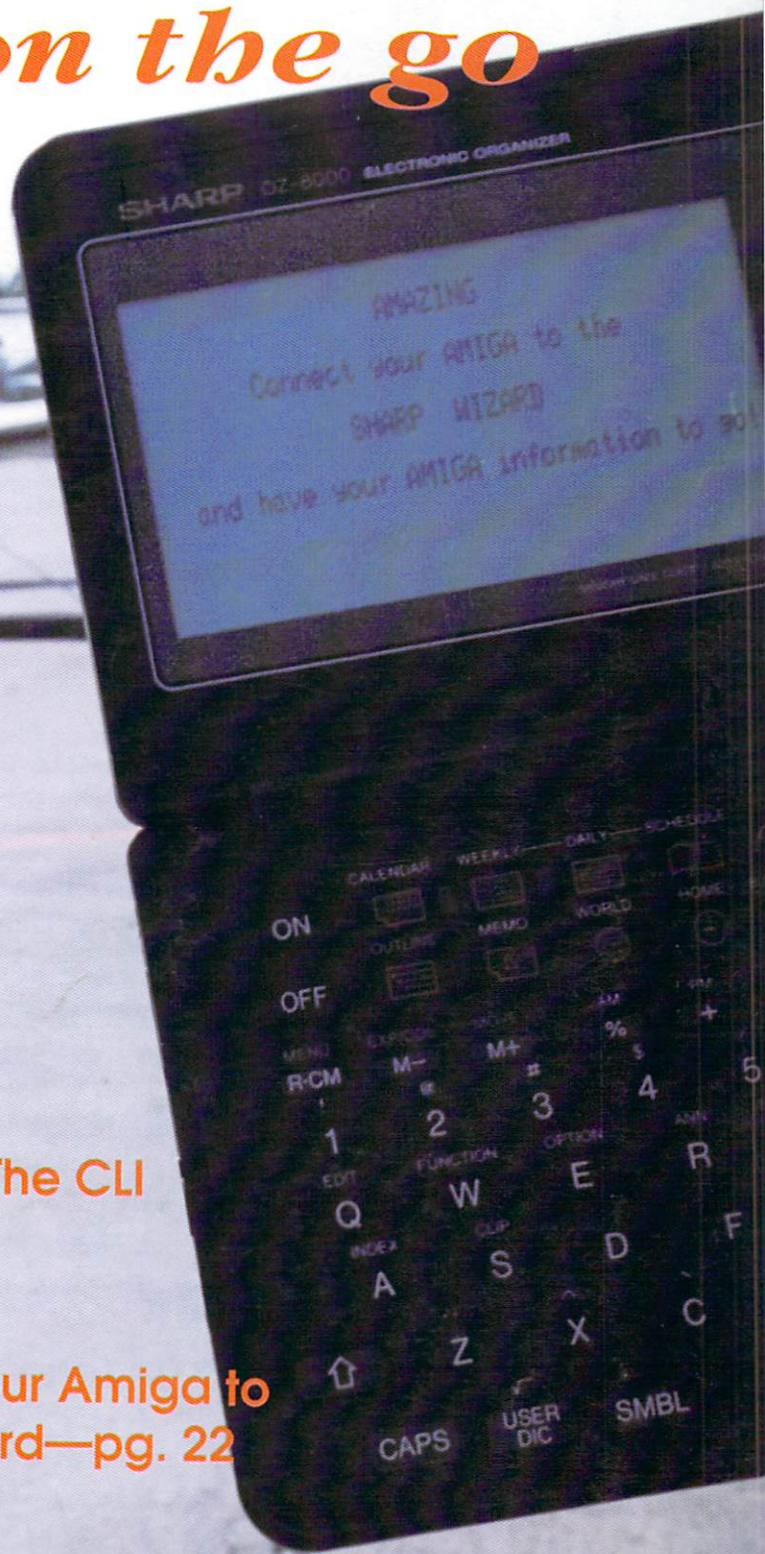
- Digital Micronic's Resolver
- CSA's Mega Midget Racer
- Epson 300C Scanner

Plus!

- A Sneak Preview of GVP's Impact Vision 24
- Superbase 4's New Features
- 3 Reasons Why You Should use The CLI

And Lots More Inside!

Connecting Your Amiga to
the Sharp Wizard—pg. 22



Don't be Fooled by any other Solution. 1280x1024 Resolution.



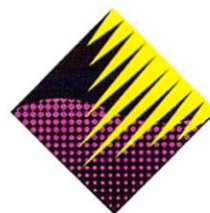
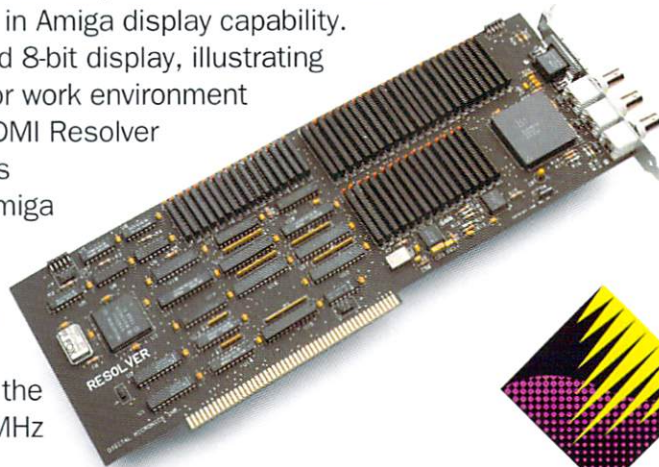
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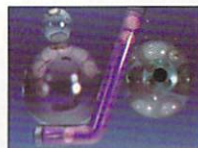
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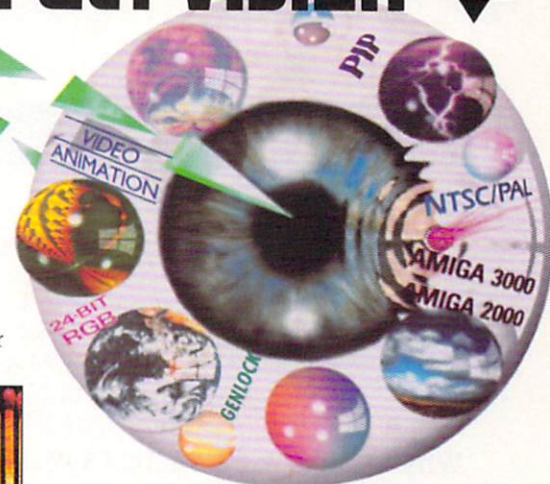


press a (configurable) "hot key" to activate any feature.

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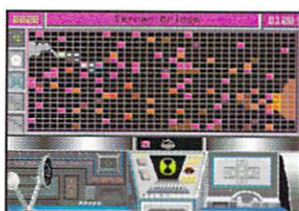
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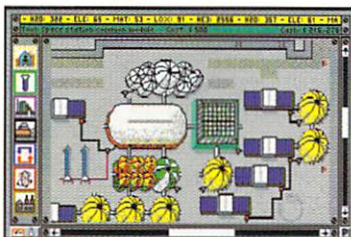
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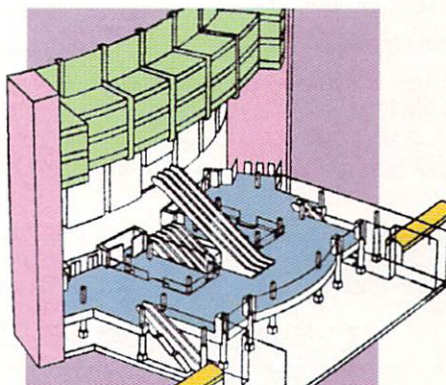
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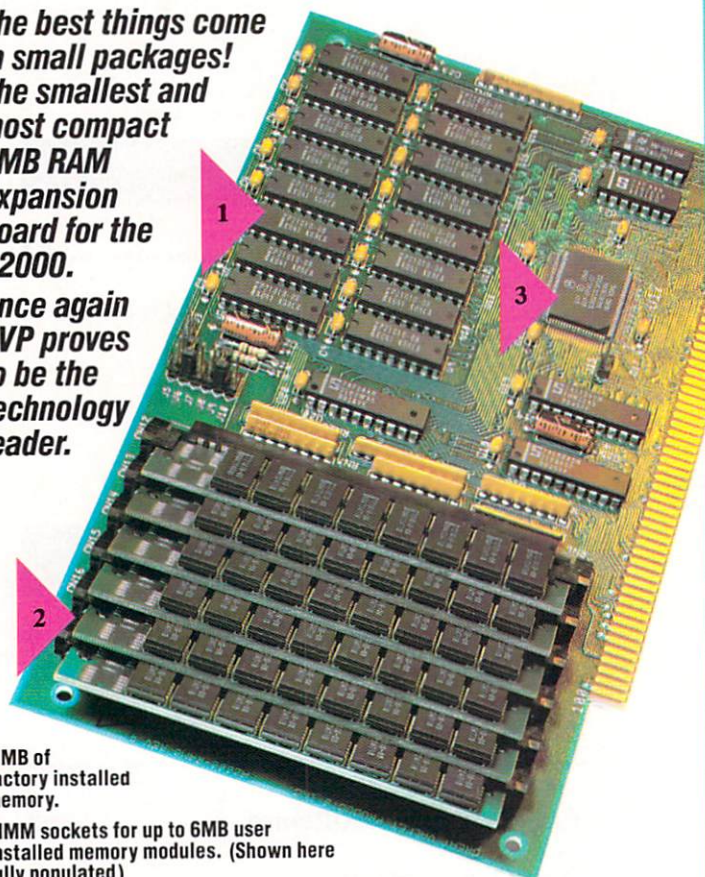


This drawing of the Mezzanine in Madison Square Garden's sky lobby was designed on the Amiga. Find out more about Lieu & Silks on page 96.

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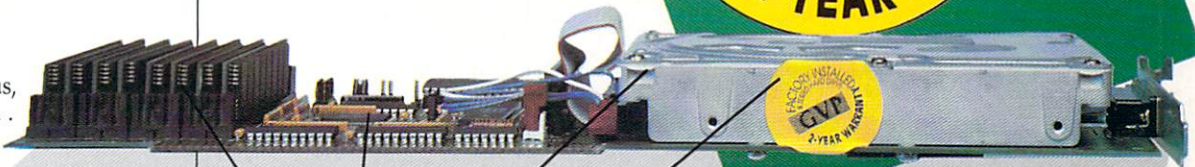
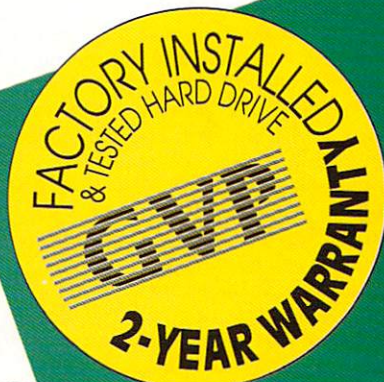


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EDITORIAL CONTENT

Dear AC

For the third month in a row I found nothing of interest for a 1986 vintage A-1000 owner in your magazine. So, unfortunately, I read "Roomers" by the Bandito (again). I, a UNIX professional, was (again) insulted.

My definition of a "propeller-head" is someone who thinks that their toy computer's ability to play whiz-bang games makes it somehow superior to a professional software/hardware system.

My advice is to get rid of "The Bandito."

Respectfully,
Gregor Kizior

I stole Mr. Kizior's letter from *FeedBack* for use in my editorial this month because he touched on two of my pet peeves—vanished support for the A1000 and The Bandito.

Amiga 1000 Owners Unite!

Mr. Kizior's frustration with a lack of A1000 support in the Amiga market is well founded. While CBM and vendors consider the A1000 obsolete, what are current A1000 owners supposed to do?

I would not presume to speak for Commodore; however, I do know that CBM has provided several "trade-up" promotions to remove A1000 machines from the general Amiga population. Yet, some of these programs allowed A1000s to be resold into the Amiga community. While this helped to increase the population of newer generations of Amigas, it reduced by only a small percentage the number of A1000s in use.

I am convinced there are a number of A1000 owners still working with their machines. We have four A1000s at PiM. While they are not used for everything we do, we would not part with them. They not only provide a history of the Amiga but have features which are not incorporated in current Amigas (such as a place to put your keyboard). The A1000 remains a viable platform under Workbench 1.3.

I disagree with Mr. Kizior in his implication that we are neglecting the A1000. Most of the software and basic instructional pieces published in AC are as important to the A1000 market as they are to the A500, A2000, or A3000. We attempt to present products and services which will benefit the entire Amiga community.

Unfortunately, there is little being developed by Amiga vendors or supplied to us by individuals that is important only to the A1000 owner. Most manufacturers want to reach the main Amiga market. They are developing hardware and software that will take advantage of the latest in Amiga hardware and peripherals. Even if the installed base of A1000 owners is extremely high,

these vendors must weigh their development costs against what they expect to generate in revenues. Since the A1000 cannot provide an increase in users, the Amiga developer questions what revenues the A1000 will generate in the future.

However, Amiga vendors should not turn their backs on the A1000. A1000 owners are generally members of the original Amiga market. They comprise the nucleus of what the market needs to survive—individuals who believe strongly in what they are doing with their Amigas.

The solution is not to demand that we be told more, it is to demand that more be done. Although there are limits to the A1000 market, there may still be an opportunity for developers to do more with an A1000. The first thing any developer will want to know is how many of these machines are still in the Amiga marketplace.

The solution is not to demand that we be told more, it is to demand that more be done.

Every issue of AC contains two reader response cards to request more information on a product or service discussed or advertised in AC. There is also a question that asks which Amiga you own. If you complete the enclosed reader response card for this issue, check off the A1000, and circle reader response number 262, we will forward your name and address to every Amiga vendor along with a statement that you want to see more development for your A1000. If you circle reader response number 263, we will include only the quantity received from these responses and let you remain anonymous.

However in order to maintain an accurate survey, we must have your name and address information. Your completed response will stop any charges of ballot stuffing and allow your response to be totaled with the others. Due to the time necessary to tabulate and record the responses, we need these returned to us no later than December 1, 1991.

This is the best way we can gain support for the A1000 user. With the introduction of Workbench 2.0 and other products, it is increasingly important that you take this time to let the Amiga community know you exist. I know I still want support for those four A1000s in our offices.

The Bandito—Why Keep It?

I have stated publicly that I am not a fan of The Bandito column. This is not to say that I am not supportive of The Bandito. Of all the truly great people who write for AC, The Bandito is one. The Bandito never misses a deadline, works hard to be as accurate as possible, and writes one of the longest running columns in AC. It is written by a third party journalist who is not a member of the staff of AC or any Amiga developer. Yet, this person has ferreted out stories and hustled to provide a different perspective of the Amiga marketplace each issue.

The Bandito has caused many problems for members of this staff. Each month we call the companies mentioned to attempt verification of the column's suggestions and statements. This is not an easy task and many times, after days of attempting to make the right contact, we have been given a terse "no comment." Yet, we believe we must do everything to maintain a fair and honest magazine for the Amiga community.

The disclaimer in the beginning of The Bandito article is real. The statements expressed by The Bandito are not necessarily the sentiments of the AC staff. We do allow The Bandito a little room for expression, but we have also allowed that room to our other contributing authors. AC means no offense by providing The Bandito's columns, which remain one person's opinions. We maintain the right of everyone the opportunity of free speech, which is why we published Mr. Kizior's letter.

A Word Of Thanks

I wish to thank Mr. Kizior for his candid thoughts and interest. His letter and concern for the Amiga market helps us all. Mr. Kizior may have started a movement for better support for all A1000 owners.

To the rest of our readership, I ask that you keep writing AC. We read and evaluate all the letters we receive because you, our readers, are always our most important source of inspiration. You may see your letter in print.

If your letter is in good taste and of reasonable length, and has no request, either direct or indirect, that you do not want it to be published, we will do our best to print it. It has always been AC's purpose to provide a forum for Amiga ideas. Please write us. Serious discussion can only help the Amiga market.

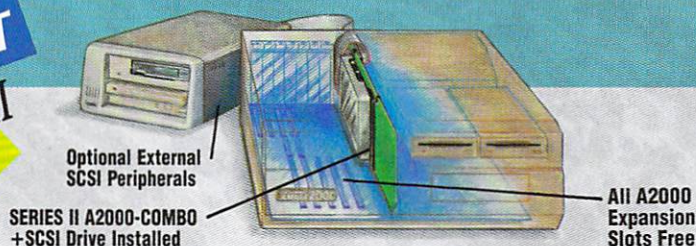
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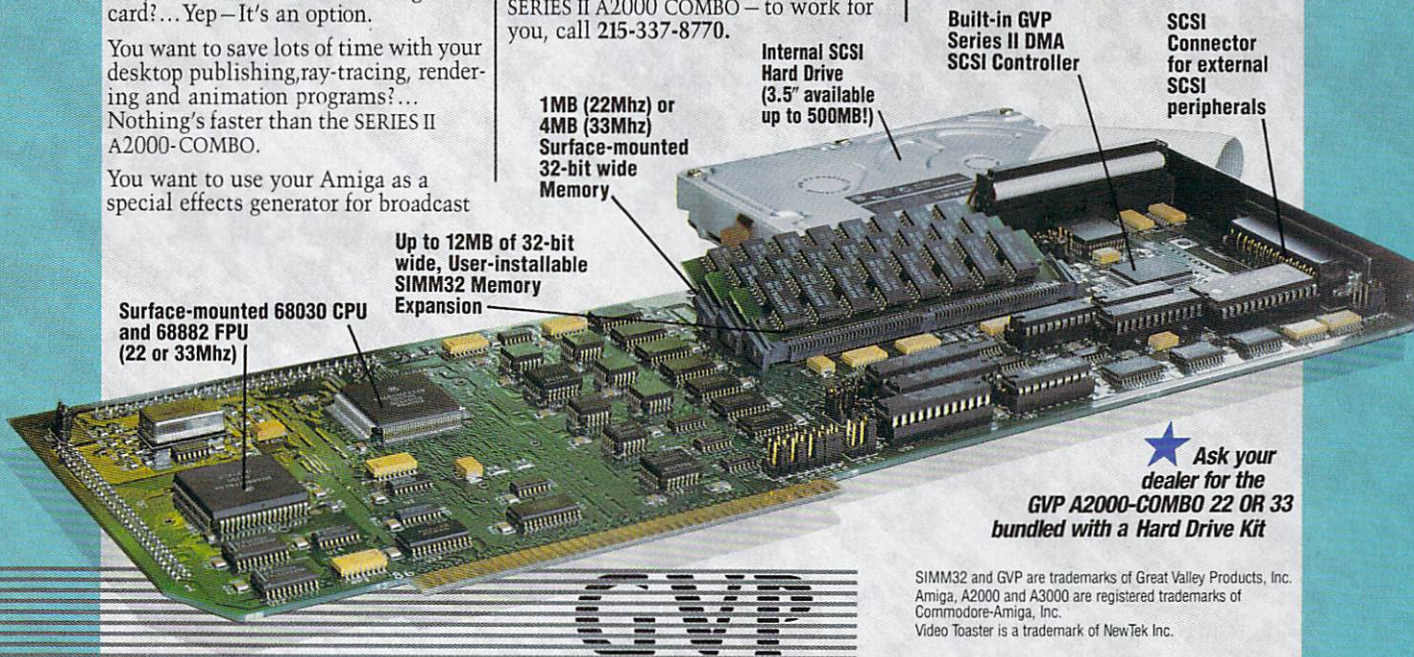
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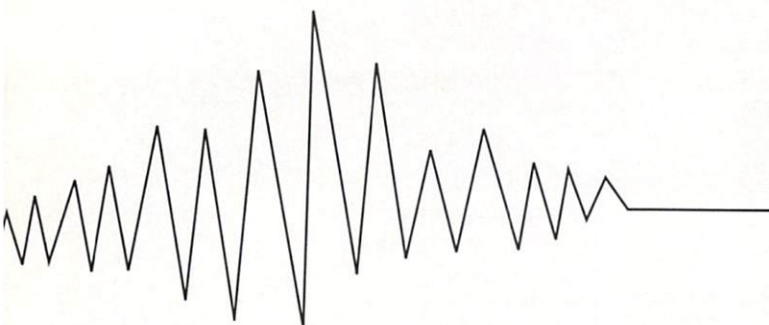
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Feedback

This month's writers offer information on Portal, AMOS, Modula, and printer devices; and give tips on clarifying computer terms, safe-guarding hardware, and reading CD-ROM discs.

Portal Explains

Thanks very much for mentioning Portal and the Amiga Zone in your September issue. Unfortunately, there were a couple errors in the article that could make the Amiga Zone seem less attractive..

Currently, Amiga users of Portal will find over 500MB of downloadable software for their use. This represents well over 5,000 programs, and the collection grows daily.

There were also some misunderstanding in the discussion of Portal's rates. All users pay the flat fee of \$13.95 per month. Included in this subscription fee are unlimited downloads and uploads, unlimited international E-mail, and free access to all public special interest groups and to the Usenet conferencing system. Hourly charges pertain only to users who must call long-distance to access Portal. Instead of incurring the long distance telephone charge, they can opt to call over the Telenet system's local access numbers. The charges for the Telenet service are \$2.50 per hour off-peak, from 6:00 p.m. to 7:00 a.m., user's local time. During peak hours, Telenet charges either \$5.50 or \$10, depending on the size of the city in which the access node is located. We feel it is important for readers to know that all

hourly charges are Telenet fees, not Portal fees.

Carol Johnson
Director of Marketing
Cupertino, CA

AMOS Tips

I like everything about your magazine (I buy every issue), but I have a suggestion for you that I think would help your magazine tremendously. AMOS is by far the fastest-growing easiest most interesting programming language to come along. Since *Amazing Computing* is the most technical of the Amiga magazines on the market, with the exception, of course, of the *TECH Journal*, I think it would be a benefit to your publication to add an AMOS tips section. European magazines are doing so with great success, and I think with the growing market of AMOS in America, *Amazing Computing* could move ahead of competitors.

Joe Force
Rockford, MI

We'll take your suggestion to our editorial staff, Joe. Also, in the spirit of cooperation with the writer of the next letter, we should explain that AMOS is a language used in programming games.
—Ed.

Clarify Common Computer Cant

The Cummer Gallery is currently purchasing an Amiga "computer bank" for students' use as one of the participatory activities in conjunction with our fine art tour program.

My minimal computer experience has been with the Macintosh II and I'm having trouble getting adequate information and training options in order to set up this educational program. My first issue of your magazine, September 1991, has provided more answers than anything else thus far. For a first timer, I would like to suggest a page devoted to clarification of what is apparently common computer terminology. In the middle of the editorial, I suddenly came upon such abbreviations as CBM and CDTV—obviously referring to Commodore divisions or whatever. If your products are indeed becoming more widely used in the States, then you'll have first-time readers with every issue, as I can find no reference to the Amiga in the computer publications to which I currently subscribe.

Thanks for a helpful issue.

Anne Saltmarsh
Educational Consultant
Jacksonville, FL

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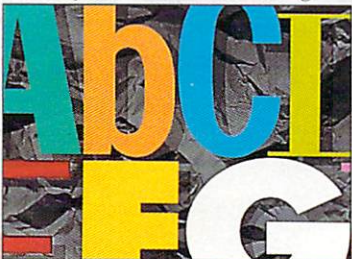
Backgrounds. Scala includes FIFTY-NINE professionally created backdrop images and textures, such as "Stone", "Marble", "Fabric", etc. THIRTY-NINE specially selected color palettes are included, allowing you to create unique and eye-catching background tapestries, adding character to your presentations. Backgrounds are stored



in IFF picture format (HAM also supported), allowing custom backgrounds to be easily created and added.

Symbols. Scala includes many useful presentation symbols such as, male, female, arrows, vehicles, etc. Symbols are stored as IFF brushes, allowing custom symbols (or other objects) to be easily created and added.

Typography. Scala includes SEVENTEEN fonts, each of which is available in many different sizes and weights.



Special effects such as tilting, underline, drop shadow, 3D and color can be applied to any individual letter, word or line. The video enthusiast will find several typefaces especially suitable for video titling purposes.

Transitions. Scala offers more than SEVENTY special effects transitions for control of transitions between pages of a presentation and how and when text, symbols or objects appear on a page. These transitions allow you to soften or accentuate changes and liven up your presentations. The speed of any transition and display times can be fully controlled.



Animations. Scala is able to load and play back animations at any point within a presentation. Text can be added and super-imposed on an animation while it is being played back.

Output. Transferring output to different media is no problem with a duo like Scala and the Amiga. Using well-known Amiga tools, presentations can be genlocked, recorded on video tape, printed on polaroids, etc. Scala includes ScalaPrint which can print out a complete presentation or just a cue for your speech. PostScript printers are supported.

Other Features. Page layout and attributes can be saved and re-used later to ensure a consistent appearance within a presentation. ASCII files can be loaded and formatted onto these pre-defined layouts. Any object or part of a screen can be defined as a "button", allowing "run-time" selectable flow of presentations by the simple click of a mouse button. Mouse buttons act as a "remote control", allowing forward and backward control of the presentation or overriding display times.

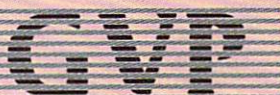
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Softfont Support for the LaserJet

I just finished reading the letter from Martin Coats about software support for softfonts on the HP LaserJet. I want to confirm that WordPerfect does in fact support softfonts for the LaserJet. However, their use is not necessarily trivial. What you must do is look through the printer drivers from within the Printer Control menu to find a good match to the softfonts you want to use. If there isn't one, then you may be in for some work. If there is one, select it as one of the six drivers you want to use and make sure you choose it as the current one. Now, this is where Mr. Coats may have had a problem. Once the particular driver has been selected, *do not* close the Printer control window. If you do, WordPerfect goes back to using the default LaserJet driver, which is probably the one for the built-in Courier font.

If there isn't a good match for the softfonts you want to use, then you need to create your own driver. This sounds horrible; however, WordPerfect has supplied a means to do this. You need to familiarize yourself with the Print program and the LaserJet manuals. The Print program allows you to copy an existing driver and then edit it. Choose a driver as close as possible to the softfont you want to use, copy it to a new driver name, and edit it. The primary thing you will have to change is the control sequence that the LaserJet uses to select the font. This information should have been included with the softfont package. The control string is somewhat cryptic, but it has encoded into it information as to the font family, font size, portrait or landscape, proportional or fixed, etc. It is discussed in, I believe, the LaserJet Technical Reference Manual, which comes with the LaserJet.

I messed with all this about three or four years ago, and I am not a systems programmer type. It sounds

difficult, but as I recall the documentation from both HP and WordPerfect were quite good and sufficient for the job.

Jeffrey A. Proehl
Dania, FL

It's a Small World!

In your magazine's editorial content, August edition, your "World Knowledge" editorial prompted me to write this letter.

I live in Dartmouth, MA, a stone's throw away from the production point of your magazine. I learned of your magazine at the 1990 World Of Amiga show in New York city two years after I had been bitten by the Amiga bug. Imagine: I traveled all that distance to learn about a magazine that covers my favorite computer only to learn that you existed a scant ten miles from my doorstep. I couldn't believe it!

I am now a firm believer in getting the Amiga word out, and, like you, like to hear about neat little success stories, such as the JBTV article in your August magazine.

A small idea our club came up with that is highly recommended to all user groups is a database with hardware serial numbers kept on file in case of theft. A small idea that could save many a person grief down the road.

Michael D. Patnode
North Dartmouth, MA

Thanks for the kind words, Mike. As to the hint, we'd suggest also that a backup be made of the data file and kept in a location different from all the hardware goodies.—Ed.

Modula User Group Runs AMOK in Germany

I'm answering to Mr. Browne's search for a Modula users group in AC August. There is one in Stuttgart, Germany, named AMOK = Amiga Modula & Oberon Klub. There are

already at least 53 AMOK PD Disks available, full of Modula and Oberon Code. A problem perhaps will be that nearly all of the code is for M2Amiga, the most used Modula Compiler, at least in Germany.

Oberon, by the way, is a new programming language by Nicklaus Wirth—smaller than Modula but nevertheless more powerful, with support for objects and inheritance. An Oberon Compiler for the Amiga is already available.

I've been a supporter of Modula for many years, but I believe that every Modula fan should have a look at Oberon. It's definitely an improvement.

Edgar Schwarz
Schwaikheim, Germany

Reading and Running CDTV

Here is a tech tip for the fans of the Fred Fish disks. I recently bought the Fred Fish collection of CD-ROM from HyperMedia. The files on this CD-ROM are in the "High Sierra" standard, so they can be read with regular CD-ROM players. I read this disk and download Fred Fish disks 1-480 using a SUN workstation. The exact details of reading a "High Sierra" CD-ROM and transferring the files to an Amiga will depend on your setup. Of course, reading a CDTV disk is much different from running it.

Wesley Ebisuzaki
Temple Hills, MD

All letters are subject to editing. Questions or comments should be sent to:

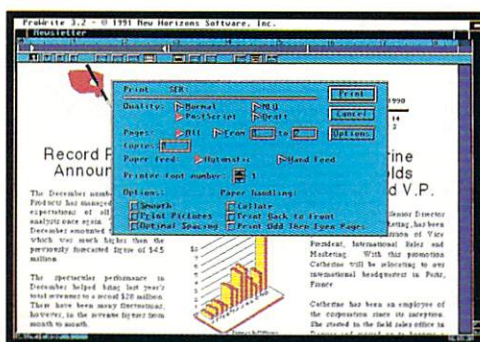
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columns, ability to import graphics, manual text wrap, voice playback, acceptance of any Amiga font, and macros (when used with AREXX). Of course, ProWrite 3.2 still has the features you expect of a high-quality word processor: 100,000-word spell check, thesaurus, cut, copy, paste, print merge, headers, and footers.

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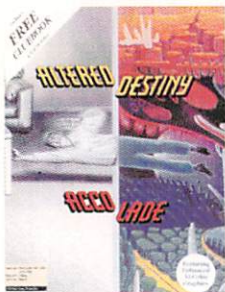
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New Products

& Other Neat Stuff

edited by Timothy Duarte

• Software •



Altered Destiny

Control the exploits of P.J. Barnett, a young businessman whose plans to spend a quiet, intimate evening watching television with his best girl are drastically changed. As P.J. settles down in front of the set, he is literally sucked through his television set, into a strange and trouble world. It isn't long before he reluctantly discovers that the future of this alien universe rests haphazardly on his shoulders.

In this other world, P.J. is confronted by the wise and mysterious JonQuah, who tells our hero that he must find Helmar, JonQuah's twin brother. During his journey, P.J. will visit the Wierd Woods, The Forest of Dreams, The Floating Island, Canyons of Fear, and The Caves of Death. The player must find Helmar, separate him from the jewel, and return it to its rightful place or he cannot return to his own world.

Altered Destiny takes full advantage of the Amiga's superior gameplay capabilities, including great sounds and music, and more than 60 screens of enhanced 32-color graphics. The official cluebook is now packaged with the game. *Suggested retail price: \$59.95, Accolade, 550 S. Winchester Blvd., San Jose, CA 95128, (408) 985-1700, Inquiry #244*

Animattes: Wedding Series

Animattes is a collection of self-running graphic routines to use when producing a wedding video. It works on any Amiga/genlock combination and is completely icon-driven for easy point-and-click operation. Once the animatte is running, there is no worry about remembering which key to hit. Hitting any key other than the ESC key will cause the animation to progress to the next appropriate action.

Choose from eleven routines to mix and match when producing your videos. Each routine is ready to use and may be personalized and modified by the user with DeluxePaint III. A tutorial gives step-by-step instructions on modifying the Animattes. *Suggested retail price: \$39.95, Electric Crayon Studios, 3624 North 64th St., Milwaukee, WI 53216, (414) 444-9981, Inquiry #200*

ArtisticCLIPS

This new volume of clip art in the Professional Draw clip format covers nine subject areas ranging from animals to transportation. The volume comes with a manual showing all the images and contains hints on using them in various programs. These images contain a high level of detail previously unavailable in structured clip art. In addition, the clips have realistic colors which have been chosen to produce optimum results when printed using black and white or color printers. Many clips contain shadings and gradients and produce excellent results when color separated. These images can be printed using any program that imports Professional Draw clips. *Suggested retail price: \$44.95, Artistic Software, 55 Selwyn Place, Kanata, Ontario, K2K 1P1, Canada, (613) 591-6039, Inquiry #201*

Audition 4

Audition 4 is the next generation digital sound system that allows you

to record and edit any sound in ways previously impossible. Written in 100% Assembly language, Audition 4 is fast and memory efficient. The program makes full use of the Amiga's interface and represents sounds graphically. Use the mouse to zoom in to selected portions of the sound for editing. Audition 4 also includes cut, copy, and paste functions, freehand edit, sequenced loops, zero search, echoes, high and low pass filters, bass and treble adjust, IFF storage format, and much more. *Suggested retail price: \$99.95, SunRise Industries, 2959 S. Winchester Blvd., Suite 204, Campbell, CA 95008, (408) 374-4962, Inquiry #202*

Background Bits 24

New from CV Designs is Background Bits 24, a collection of 24-bit graduated backdrops set up for those either titling with a Toaster or any 24-bit program that accepts 736 x 480 overscan ability. Graduated shades in blue, gold, and greens, shaded boxes, gridwork, and brushes to create your own backdrops are packed on two handy disks. *Suggested retail price: \$28.00, CV Designs, 61 Clewley Road, Medford, MA 02155, (617) 391-9224, Inquiry #203*

Barney Bear Goes Camping CDTV

Barney Bear and his family have decided to go camping. You can take a walk with Barney, and learn about the animals that you see. Listen to the ranger talk about facts of nature or take pictures for a slide show as you go for a walk. Other activities such as connect-the-dots, matching games, simple mazes, and a coloring book are included. This colorful, interactive game from Free Spirit Software will teach children about nature as they play. The program is geared toward children between the ages 2-6. *Suggested retail price: \$39.95, Free Spirit Software, P.O. Box 128, 58 Noble St., Kutztown, PA 19530, (215) 683-5609, Inquiry #204*

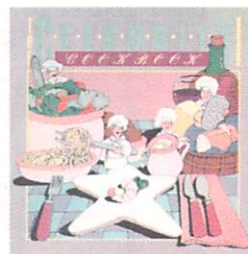
CanDo 1.5

CanDo, INOVAtion's powerful interactive audio-visual applications authoring system, allows any Amiga user to create stand-alone software applications that take advantage of virtually all of the Amiga's outstanding capabilities. CanDo v. 1.5 is AmigaDOS 2.0 and A3000 compat-

ible, contains database functions, multiple screens and windows, floating point math, and more. An upgrade is available to registered users for \$40.00. *Suggested retail price: \$149.95, INOVAtion, 8499 Greenville Ave., #209B, Dallas, TX 75231, (214) 340-4991, Inquiry #205*

Celebrity Cookbook v 3.1

New from USA Media, The Celebrity Cookbook offers star recipes at the touch of a button and the power of a professional caterer in your Amiga computer. You can serve the favorite recipes of stars like Frank Sinatra, Ronald Reagan, Sophia Loren, Bob Hope, Shirley MacLaine, and more. Additional features include diet secrets of the stars, wine directory, bartender's guide, Perle Mesta's party tips, and a personal recipe filer. This new version also offers 100 celebrity and professional catering recipes. *Suggested retail price: \$39.99, USA Media, 7810 Malcolm Rd., Clinton, MD 20735, (301) 868-9060, Inquiry #206*



Cosmostruction

In the near future, space colonies will require tremendous amounts of energy. Become a Constructor and construct a cosmic energy duct between space colonies and nearby planetoids to drain them for power. You and an opponent take turns constructing a piece of the energy duct, accumulating points as you play. You must avoid mine fields, use warp gates, and delay your opponent as you both race towards the planetoid. Play against the computer or a friend. Change the mode during mid-game action. Lead your opponent into traps, communicate with aliens for points, use warp gates for positional tactics, and more. Cosmostruction is hard drive installable and runs on all Amigas with 1MB of memory. *Suggested retail price: \$29.95, Empire Graphics, P.O. Box 964, Union, NJ 07083, (908) 964-7864, Inquiry #207*

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Thanks to Octree for their "Bishops" image.

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New Products

& Other Neat Stuff

Digital Landscape 2.0

New from Digiscap Software is Digital Landscape 2.0, the 3-D terrain modeling software. The program produces 3-D solid and wire frame surfaces, profiles, and color contour renderings. Other features include the loading of ASCII text files, latitude and longitude indicators, an increased grid size, visible controls for easy rendering, and more. Three elevation disks, with over 400,00 elevations covering the U.S., are packaged with the program. *Suggested retail price: \$124.95, Digiscap Software, P.O. Box 113058, Carrollton, TX 75011-3058, (214) 241-9891, Inquiry #208*

Directory Opus

A full-featured, multifunctional directory utility, Opus provides all the standard dir util features, such as two directory windows for file copying and deleting, renaming, and so forth. View IFF pics, brushes, and anims,

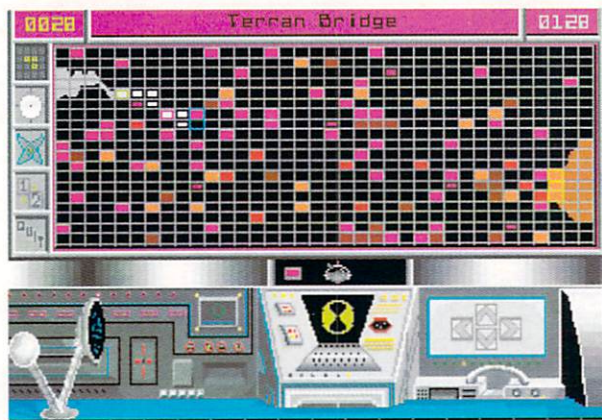
Suggested retail price: \$59.95, INOVAtronics, 8499 Greenville Ave. #209B, Dallas, TX 75231, (214) 340-4991, Inquiry #209

Fighter Duel: Corsair vs. Zero

Unmatched flight simulation and combat action is now available for your Amiga computer or CDTV. Features include 24 frames per second, 28 frames per second with fast ram, complete aerodynamic modeling, hi-res resolution, interlaced color graphics, detailed aircrafts, mouse-controlled panorama, 2 player option via modem with full performance, hard disk installation option, and AmigaDOS 2 compatibility. *Suggested retail price: \$49.95, Jaeger Software, 7800 White Cliff Terrace, Rockville, MD 20855, (301) 948-6862, Inquiry #210*

Flow 3.0

New Horizons' Flow, the popular idea organizer software has recently been upgraded. Coupled with ProWrite, their full-featured word processor, users can generate their ideas with Flow and then import the outline into ProWrite. Other new features found in Flow 3.0 include



Cosmostruction

play sound files, read text files, and launch executables. Simply double-click on the filename in the directory window. Opus is also configurable, with over 100 user-defineable buttons and menus. Opus includes on-line help for all features, as well as for AmigaDOS error codes. It provides memory and CPU usage meters and an ARexx port and is iconifiable. Opus runs on any Amiga with 1MB of memory using DOS 1.2 or higher.

sophisticated outline auto-numbering, ARexx support, the ability to create macros, savable configurations, screen options, headers and footers, spell checking, Workbench 2.0 enhancements, and lots more. It requires 512K of memory and Kickstart 1.2 or later. Current Flow owners should contact New Horizons for update information. *Suggested retail price: \$110.00, New Horizons Software, P.O. Box 43167, Austin,*

TX 78745, (512) 328-6650, Inquiry #211



Fun School 3 CDTV

Fun School 3 for the under 5s consists of six stunning educational modules that will help your child develop many skills including number and word skills at his or her own pace.

Beautifully-created pictures, stunning animation, and exciting sounds will keep your child coming back for more. A parent/teacher guide on the disc will ensure that you get the most out of the modules. Fun School 3 has been developed by a team of educationalists with proven experience in creating successful educational materials for children of all ages. *Suggested retail price: \$49.95, Europress Software, Europa House, Adlington Park, Macclesfield, SK10 4NP, England, (44) 625-859333, Inquiry #214*

GENP Multimedia

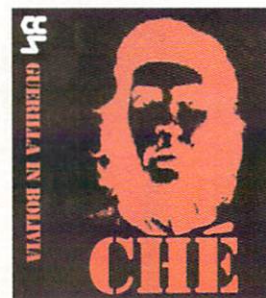
A new product for family historians, GENP Multimedia integrates with GENP v 1.5. Add any form of multimedia to your genealogical databases, with a maximum of 10 items per individual entry. From the selection window, the user can choose to display pictures or hear sounds from a variety of sources such as CR-ROM or video. Included with the package is a genealogical database which demonstrates pictures, sound, and text. *Suggested retail price: \$30.00, GENP, 37 Charles St., Cheltenham, Victoria, 9192, Australia, (03) 584-2765, Inquiry #212*

Guerilla in Bolivia

A strategic, simulation with action sequences, Guerilla in Bolivia was inspired by the diaries of Che Guevara, which were kept during the campaign and start on November 7, 1966 in Camiri. Leading a guerilla troop is a dangerous and demanding challenge. You must take on government troops and manage the daily

survival of your followers.

The simulation takes place across the whole of Bolivia, you have six detailed maps used by Che himself. Deal with ambushes, clashes with militia, sort out the food and provisions for your men, train any new recruits, and run a Guerilla campaign. You start with 15 fighting men the core of Che Guevara's operational unit. Guerilla in Bolivia is two games in one; a strategic simulation and an exciting adventure. *Suggested retail price: \$45.00, Cases Computer Simulations Ltd., 642 Lea Bridge Road, London, England E10 6AP, (011) 44-81-558-5274, Inquiry #213*



Interface Design Kit

The Interface Design Kit contains four disks of icons and button images, ready to be incorporated into your software authoring projects and pro-level multimedia presentations. The images have been saved in 640 x 200 med-res and 640 x 400 hi-res. Guide screens show related groups of images, each with its own ID number for easy location. All images are saved as brushes for ease of use. Any paint program can be used to edit the images. A browser program also allows you to view all guide screens and brushes. *Suggested retail price: \$59.95, INOVAtronics, 8499 Greenville Ave. #209B, Dallas, TX 75231, (214) 340-4991, Inquiry #215*

Personal Fonts Maker

Personal Fonts Maker is an excellent, comprehensive tool for designing and processing both printer and screen fonts. Standard Amiga fonts and fonts created with Personal Fonts Maker can be transferred to a printer's memory and printed at maximum quality and speed. No other program offers complete control over printed fonts. PFM supports IFF graphics for modifying typographical fonts from scanning devices, supports downloading to a variety of printers, and

SAVE IT. MOVE IT. GET IT BACK.

Valuable utility programs can save you time, money and, in the case of catastrophic errors like hard drive failure, possibly months of work.

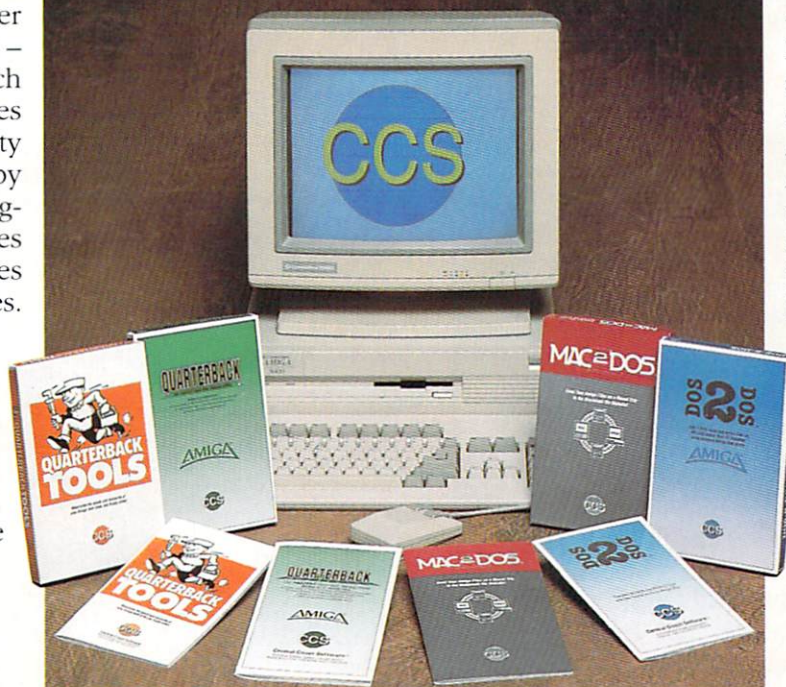
Quarterback Tools – Recover Lost Files

Fast and easy. Reformats all types of disks – either new or old filing systems – new or old Workbench versions. Also optimizes the speed and reliability of both hard and floppy disks. Eliminates file fragmentation. Consolidates disk space. Finds and fixes corrupted directories.

Quarterback – The Fastest Way To Back-Up

Backing-up has never been easier. Or faster. Back-up to, or restore

**Back-Up...Transfer...Retrieve
Quickly And Easily
With Central Coast's
Software For The Amiga**



from: floppy disks, streaming tape (AmigaDOS-compatible), Inner-Connection's Bernoulli drive, or ANY AmigaDOS-compatible device.

Mac-2-Dos & Dos-2-Dos – A Moving Experience

It's easy. Transfer MS-DOS and ATARI ST text and data files to-and-from AmigaDOS using the Amiga's own disk drive with Dos-2-Dos; and Macintosh files to-and-from your Amiga with Mac-2-Dos. Conversion options for Mac-2-Dos include ACSII, No Conversion, MacBinary, PostScript, and MacPaint to-and-from IFF file format.



Central Coast Software

A Division Of New Horizons Software, Inc.

206 Wild Basin Road, Suite 109, Austin, Texas 78746
(512) 328-6650 * Fax (512) 328-1925

Quarterback Tools, Quarterback, Dos-2-Dos and Mac-2-Dos are all trademarks of New Horizons Software, Inc.

New Products

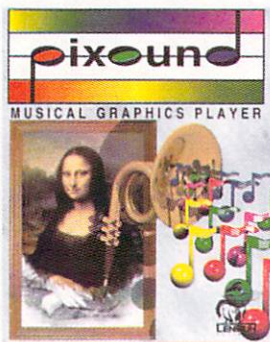
& Other Neat Stuff

includes a special programming language, a printer driver modifier, numerous fonts and support tools, and a 320-page manual. *Suggested retail price: \$99.95, Centaur Software, P.O. Box 4400, Redondo Beach, CA 90278, (213) 542-2226, Inquiry #216*

Personal Write

Personal Write is an extremely fast word processor which is packed with unique capabilities. It features a rich set of powerful commands which let you read, edit, store, convert, compress, encrypt, and print text. The user interface is friendly and flexible and 80 menus and hundreds of gadgets let the user tailor the program to fit every need, while the default settings let the inexperienced user start working with the program right away. Personal Write features full multi-

tasking, a built-in print spooler, file compression, PostScript output, automatic hard disk installation, and more. Fonts created with Personal Font Maker are supported. *Suggested retail price: \$49.95, Centaur Software, P.O. Box 4400, Redondo Beach, CA 90278, (213) 542-2226, Inquiry #217*



Pixound

Pixound is a fascinating musical instrument which transforms Amiga graphics into unique new music. Load

any graphic image, or create one using Pixound's built-in screen generators, then hear it translated into a rich variety of harmonies and melodies using the Amiga's voices, a MIDI keyboard, or both. Invent new instruments with every screen then play them back and explore the relationship between art and music—either automatically or under your control with the mouse. Dozens of controls let you create shimmering bursts of notes or slow, lyrical harmonies with just the touch of a key.

This new version loads and saves HAM images, saves performances as MIDI files, has an improved, faster interface on dialogue boxes, and is Workbench 2.0 and 68020/68030 compatible. *Suggested retail price: \$99.00, Centaur Software, P.O. Box 4400, Redondo Beach, CA 90278, (213) 542-2226, Inquiry #218*

Police Quest 3: The Kindred

Continuing the Police Quest series, take the role of homicide detective Sonny Bonds. Follow a trail of insanity, brutality, and bizarre ritual killings. Video-captured live actors, combined with an original musical soundtrack by Jan Hammer make Police Quest 3 frightfully real and closer to an interactive movie than any Sierra product to date. *Suggested retail price: \$59.95, Sierra On-Line, P.O. Box 485, Coarsegold, CA 93614, (209) 683-4468, Inquiry #219*

ReSource V 5

The Puzzle factory introduced a powerful new version of ReSource, the popular dissambler for the Amiga. Resource runs on any Amiga, but can detect the presence of a 68020 or 68030 CPU. It also allows the user to output either traditional 68000 syntax, or the new Motorola M68000 family assembly language syntax. It is fully compatible with the Macro68 assembler. An all-new, on-line help facility and over 900 menu functions allow you to create real assembler source code. Base-relative addressing and user-defined structures are supported. *Suggested retail price: \$150.00, The Puzzle Factory, P.O. Box 986, Veneta, OR 97487, (503) 935-3709, Inquiry #220*

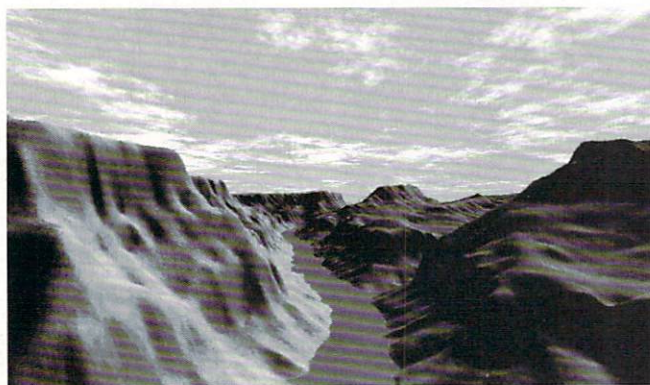
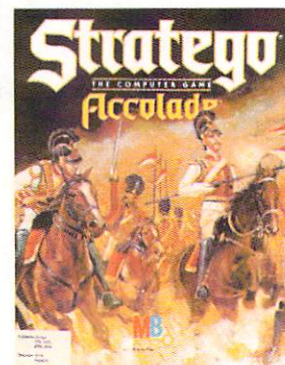
Stereo Master

A new full-featured stereo sampler is now available for the Amiga and it

offers more extras than an M series BMW. Features include built-in programmable special effects, a twin stereo spectrum analyzer, a sample sequencer for 18 samples, real time and step time entry of score on sequencer, twin oscilloscopes, multiple filters, multitasking, and more. *Suggested retail price: unavailable, Microdeal, distributed by American Software Distributors, 502 E. Anthony Drive, Urbana, IL 61801, (217) 384-2050, Inquiry #221*

Stratego

This computer version of the Milton Bradley classic retains the traditional game board, game pieces, and rules from the board game, including tournament rules. The computer version additionally leverages the ability of the computer by providing strategists with custom game boards and piece sets, a library of game set-ups, multiple levels of difficulty, and digitized sound effects. In Stratego, one player competes with the computer. As in the traditional game, each opponent is provided with a 40-piece army made up of officers ranked in importance, according to their position in addition to one spy, six bombs, and one flag. Each opponent secretly sets up one side of the game board or battlefield, planning a defense and an offense. The objective is simple. Whichever side captures the opponent's flag first wins the game. Realistic battlefield sound effects and victorious music create a sense of realism in the game as well. *Suggested retail price: \$49.95, Accolade, 550 S. Winchester Blvd., San Jose, CA 95128, (408) 985-1700, Inquiry #222*



Animate the real world!

New! With **Scenery Animator** you can create incredibly realistic animations of real world or imaginary fractal landscapes. It's easy to use and has many powerful features not found in other software. See it at your local dealer today and take a test flight.

- * 3-D control of camera path
- * All resolutions and IFF24
- * Unlimited landscape size
- * Includes animation editor
- * Map shows overhead view
- * Instant preview window
- * Color and lighting control
- * Requires 2 megabytes

Natural Graphics

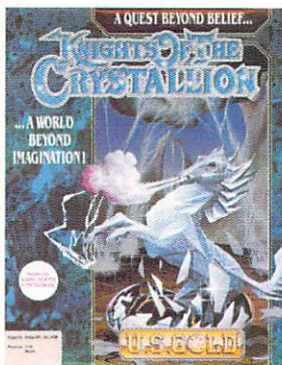
P.O. Box 1963, Rocklin CA 95677

(916) 624-1436

Circle 132 on Reader Service card.

The Adventures of Willy Beamish

New from Dynamix is an original comedy-adventure which may well become the benchmark of computer animation. The Adventures of Willy Beamish boasts hilarious insight and light-hearted 3-D animation with a sensational music soundtrack. Adults and kids will love Willy's zany antics, his peculiar family, and the host of geeks, freaks, animals, and creeps. *Suggested retail price: \$59.95, Dynamix, 99 W. 10th, Ste. 337, Eugene, OR 97401, (503) 343-0772, Inquiry #223*



The Knights of the Crystallion

The Knights of the Crystallion, a completely original game combining skill, concentration, and strategy, takes players to Orodrid, a city hollowed out from the skeletal remains of a gargantuan beast. In the beast's massive skull waits the Crystallion, a mystical, crystal horse of uncommon beauty, strength and intelligence. Players who excel at the five separate quests are given the means to hatch the Crystallion from its crystal egg, harness its powers, and joins the ranks of the Knights of the Crystallion, whose honor it is to lead the great city.

Knights of the Crystallion is rendered with a combination of original ray traced graphic art in HAM mode color graphics. A symphonic music generator and digitized visual, voice, and sound effects are also included. *Suggested retail price: \$59.95, U.S. Gold, 550 S. Winchester Blvd., San Jose, CA 95128, (408) 246-6607, Inquiry #224*

V-LAN Driver

Videomania, Inc. introduced a V-LAN driver for the NewTek Video

Toaster. The new driver allows the Video Toaster's Switcher to be automatically controlled from any V-LAN compatible edit controller, such as the SuperMICRON. Both mixes and wipes are supported, with 10 wipes being selected directly from the controller and the other wipes set up on the Toaster. The V-LAN compatible machine controller connects directly to the serial port of the Amiga. A disk is included that contains the ARexx file for Toaster directory.

The V-LAN Toaster driver also provides frame-by-frame animation control performed from the Amiga serial port via a V-LAN compatible animation controller. When the SuperMICRON editor is used with the Toaster, the user has a very cost-effective system that does everything from animation to frame accurate A/B Roll editing. *Suggested retail price: unavailable, Videomania, Inc., 211 Weddell Drive, Sunnyvale, CA 94089, (408) 745-1700, Inquiry #225*

Wizardry: Crusaders of the Dark Savant

Sir-tech has released Crusaders of the Dark Savant, the sequel to Bane of the Cosmic Forge. Import a troop of characters from Bane or create a party of your own. Choose from eleven races, including the Elf, Gnome, Rawulf, and alien Mook. Select your characters' professions from any one of 14 different disciplines, including the Valkyrie, Ninja, Monk, and Samurai. Each character is fully rounded with 8 essential statistics: strength, intelligence, piety, dexterity, speed, vitality, personality, and karma. Additionally, characters can learn skills from three areas: Weaponry, Physical, and Academia. Spellcasters will delight in their selections from 6 different elemental realms, each with 7 power levels. Take your party on a journey through this full-color world filled with castles, caves, forests, and waters. Come to know both friends and foes as you quest for a secret, hidden ages ago by a scientist with vision beyond his time. The very time he was beyond is now, and the secret waits for someone with the vision, intelligence, and will to uncover it. *Suggested retail price: \$69.95, Sir-Tech Software, P.O. Box 245, Ogdensburg, NY 13669, (315) 393-6451, Inquiry #226*

Women in Motion CDTV

On-Line is proud to present Women in Motion, an encyclopedia of movement. These historic photographs are one of the great monuments of 19th century photography and have never been superseded, providing a unique insight into the moving form, you can examine each frame of animation, print it out, or load it into a graphics program. Women in Motion contains nudity and parental guidance is suggested. *Suggested retail price: \$49.95, On-Line Entertainment Ltd., 642a Lea Bridge Rd., London, E10 6AP, UK. Inquiry #227*

• Hardware •

Air Mouse Remote Control

With the Air Mouse Remote Control responding to your commands, master your presentation and make your point like never before. Without being tethered to your equipment, the Air mouse puts the presenter back in control of a presentation. With one hand, a user can manage presentations from anywhere in the room. All standard computer-mouse functions are supported. Pull down menus, point and click, click and drag, open and close files, and

New Products

8 Other Neat Stuff

more. *Suggested retail price: \$595.00, Selectech, Ltd., 30 Mountain View Drive, Colchester, VT 05446, (802) 655-9600, Inquiry #257*

Alfa Data Cordless Mouse

Find new freedom with your mouse with the new cordless mouse from Alfa Data. Features include infra-red signal transmission, user-friendly front panel LED indicators, an ergonomic shape, and recharging directly from the computer or from an external power connector. *Suggested retail price: \$99.95, CHS Inc., 602 North Country Fair Drive, Champaign, IL 61821, (217) 356-1962, Inquiry #228*

AlterImage Genlock

The AlterImage Genlock, a compact and affordably priced video interface for the Amiga, has been introduced by The Disc Company. Simply connect the genlock to the Amiga's RGB port and plug the camcorder, VCR, or videodisc player into the unit's Video In/Out port. An RGB Through allows a Commodore



New, script-driven ray tracing software for the Amiga!

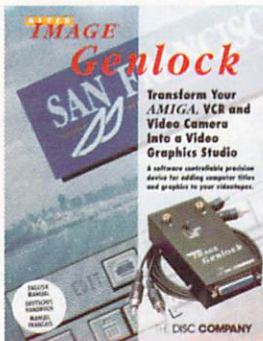
- True texture and bump *wrapping* for amazingly real surfaces
- Built in fractal objects: trees, hills, and 3d Mandelbrot mountains
- Haze and soft shadows
- Virtual objects make possible scenes with *millions* of polygons!
- Tweening and shape morphing
- 24 bit output (IFF24 supported)
- Powerful, high-level, script language for precision scene construction
- 1 meg min. Additional memory and math coprocessor recommended

Introductory price, only \$99.95! Demo version also available. Send \$5.00 (including tax & shipping) to

Radiance Software

2715 Klein Rd., San Jose, CA 95148

New Products & Other Neat Stuff



monitor to be connected and two 6-foot RCA-compatible cables are included. A convenient toggle switch allows the user to view the video and the graphics separately or in mixed form. This function is also software controllable through The Disc Company's AlterImage Video F/X.

Suggested retail price: \$249.95, The Disc Company, 11040 Santa Monica Blvd., Los Angeles, CA 90025, (213) 478-6767, Inquiry #229

Bigfoot A500 Power Supply

Micro R & D's popular power supply has been upgraded to 200 watts, without increasing the price. In addition, the voltage output on Bigfoot has been specifically adjusted to provide exceptional performance for today's high speed accelerator boards. Bigfoot comes with a one year warranty and will power any add-on device available for the Amiga 500. *Suggested retail price: \$129.00, Micro R & D, 137 N. 7th, Loup City, NE 68853, (800) 527-8797, Inquiry #230*

SecureKey

The SecureKey allows Amiga owners to protect their computer from unauthorized use. An access security board for the A2000 and A3000, enter one password that you select to gain access to your Amiga. The SecureKey takes control of your Amiga at power up and presents a

security screen. Once the correct password is entered, the Amiga will continue to boot up normally. If the correct password is not entered correctly within three tries, then the Amiga needs to be powered down before the password can be entered again. *Suggested retail price: \$124.95, DKB Software, 50240 W. Pontiac Trail, Wixom, MI 48393, (313) 960-8750, Inquiry #231*

Slingshot

Slingshot is a no-frills device that attaches to the A500 expansion bus, providing the user with one A2000 compatible expansion slot. It works with any A2000 compatible card that does not require the A2000 video or CPU slots. A one year warranty is also included. *Suggested retail price: \$39.95, Micro R & D, 137 N. 7th, Loup City, NE 68853, (800) 527-8797, Inquiry #232*

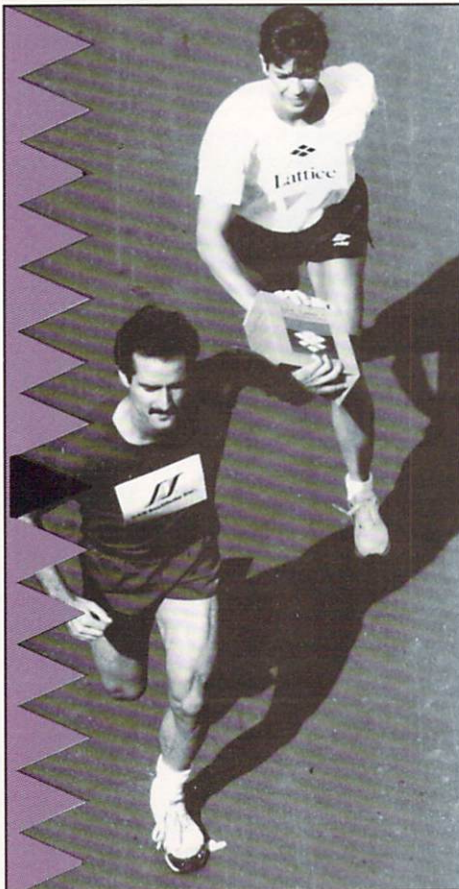
SM-16X2-RGBS & RMT-16X2

Network Technologies Inc. announces the SM-16X2-RGBS, a 16-input 2-output video matrix switch that allows 16 workstations to be

connected to 2 display devices. This switch is operated remotely, up to 500 feet away with the RMT-16X2 control unit. The RMT-16X2 has 32 backlit and touch-activated switches for video source selection. Each RGBS source can be independently connected to any or all of the two display devices. A 25-foot cable is supplied, connecting the matrix switch via a 9 pin D connector. Both units have a one year warranty. *Suggested retail price: SM-16X2-RGBS \$2425.00, RMT-16X2 \$450.00, Network Technologies Inc., 7322 Pettibone Rd., Chagrin Falls, OH 44022, (216) 543-1646, Inquiry #233*

Tommy Gun Rapid Fire Device

Micro R & D has introduced a device that lets Amiga owners a rapid fire capabilities to any mouse or joystick. Ideal for the game player, this device will automatically pulse the fire button. Besides convenience, the Tommy Gun will help increase scores. A one year warranty is also included. *Suggested retail price: \$14.95, Micro R & D, 137 N. 7th,*



Continue the Winning Tradition With the SAS/C® Development System for AmigaDOS™

Ever since the Amiga® was introduced, the Lattice® C Compiler has been the compiler of choice. Now SAS/C picks up where Lattice C left off. SAS Institute adds the experience and expertise of one of the world's largest independent software companies to the solid foundation built by Lattice, Inc.

Lattice C's proven track record provides the compiler with the following features:

- ▶ SAS/C Compiler
- ▶ Global Optimizer
- ▶ Blink Overlay Linker
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- ▶ Source Level Debugger
- ▶ Macro Assembler
- ▶ LSE Screen Editor
- ▶ Code Profiler
- ▶ Make Utility
- ▶ Programmer Utilities.

SAS/C surges ahead with a host of new features for the SAS/C Development System for AmigaDOS, Release 5.10:

- ▶ Workbench environment for all users
- ▶ Release 2.0 support for the power programmer
- ▶ Improved code generation
- ▶ Additional library functions
- ▶ Point-and-click program to set default options
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Be the leader of the pack! Run with the SAS/C Development System for AmigaDOS. For a free brochure or to order Release 5.10 of the product, call SAS Institute at 919-677-8000, extension 5042.

SAS and SAS/C are registered trademarks of SAS Institute Inc., Cary, NC, USA.

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SAS Institute Inc.
SAS Campus Drive
Cary, NC 27513

Circle 138 on Reader Service card.

Loup City, NE 68853, (800) 527-8797, Inquiry #234

Video Crisper

When you adjust the brightness and contrast controls, do your colors look washed-out? The Video Crisper will brighten and sharpen all of your colors and you will notice an incredible difference in your graphics programs, your workbench screen, entertainment programs, and everything else you do on your Amiga. The unit plugs into the Amiga RGB port and no soldering is required. An enhanced version designed for use with external genlocks is also available. *Suggested retail price: \$49.00, enhanced: \$149.00, The Memory Location, 396 Washington St., Wellesley, MA 02181, (617) 237-6846, Inquiry #253*

Video Toaster Workstations

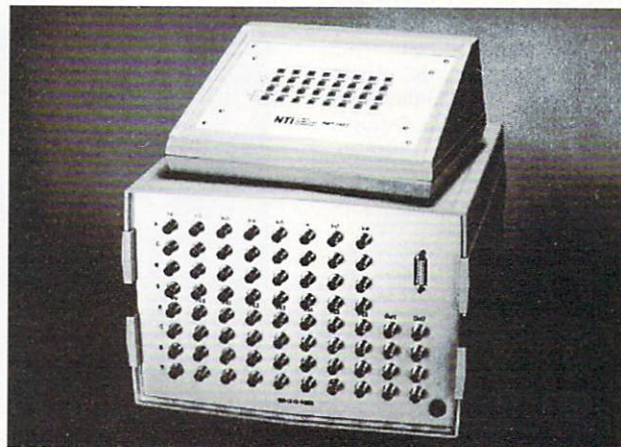
NewTek announced two new configurations of the popular Video Toaster. The Video Toaster Workstation is an entire television studio full of equipment, compacted into one easy-to-use tool. This self-contained system requires no host computer, but is compatible with many graphic file formats from a variety of personal computers. It comes ready to operate with a video switcher, digital effects, 3-D animation, broadcast paint, 35 ns character generator, frame grabber, and more. The Video Toaster Workstation/30 has all the functions of the standard Toaster, but adds the power of Motorola's 68030 processor running at a speed of 50 MHz. It also has a 68882 math coprocessor running at 50 MHz to speed complex graphics calculations up to 20 times and can take on large 3-D rendering projects. *Suggested retail price: Workstation \$3,995.00, Workstation/30 \$8,995.00, NewTek, 215 S.E. Eighth St., Topeka, KS 66603, (913) 354-1146, Inquiry #235*

• Books •

Amiga C Manual

A complete disk-based C manual for the Amiga, this product describes screens, windows, graphics, gadgets, requesters, alerts, menus, and more. The whole manual is stored on four disks and is composed of 15 chapters, more than 100 executable examples, and several utilities. Since

you don't have to type in the examples, you can run the programs, or immediately start to experiment with the source code. *Suggested retail price: \$35.00, Amiga C Club, Tulevagen 22, 181 41 Lindingo, Sweden, Inquiry #236*



Network Technologies Inc.'s SM-16X2-RGBS & RMT-16X2

Fast Guide to Amiga CLI

Users looking for a quick reference to AmigaDOS will be interested in Vidia's Fast Guide to Amiga CLI. The book covers AmigaDOS 2.0 as well as 1.3, and points out the differences between the two versions of AmigaDOS for those who are upgrading. The alphabetized descriptions cover every option of every command. The book supplies many examples so that users can use even unfamiliar commands quickly. Sections discussing scripts, devices, filenames, pattern matching, redirection, piping, and Shell commands are also included. *Suggested retail price: \$8.95, Vidia, P.O. Box 1180, Manhattan Beach, CA 90266, (213) 379-7139, Inquiry #255*

Railroad Tycoon Master Strategies for Empire Builders

This book is written for anyone hooked on Sid Meier's Railroad Tycoon, the complex railroad-building simulation game that lets players act as switchmen, investors, and tycoons while building and expanding empires. Author Shay Addams provides clear and precise strategies, which are presented with a twisted sense of humor that will be appreciated by

stymied players. The book begins with an overview of the game and follows with chapters on the basics of becoming a railroad tycoon. *Suggested retail price: \$14.95, McGraw-Hill, 2600 Tenth St., Berkeley, CA 94710, (415) 548-2805, Inquiry #237*

New Products

8 Other Neat Stuff

in this new book. It includes inside information direct from the designers of the game. Discover the best areas to build on each map, manipulate the stock market to your advantage, learn the best way to survey your line, and more. *Suggested retail price: \$12.95, Compute Books, 324 West Wendover Ave., Suite 200, Greensboro, NC, 27408-8439, Inquiry #238*

• Other Neat Stuff •

ASDG offers JPEG

ASDG Inc., a leading provider of innovative color imaging solutions, have brought the revolutionary image compression technology known as JPEG (Joint Photographic Expert Group) to the Amiga. The ability to load and save JPEG files will become a standard part of Art Department Professional in its next release. With JPEG, a true color or gray scale image can be compressed to a fraction of its original size without significant degradation. Also, ASDG's implementation meets the JFIF standard, allowing exchanging JPEG files from an IBM or Macintosh with those created by Art Department Profes-

ArtisticCLIPS

Introducing ArtisticCLIPS, color clip art in Professional Draw clip format. Volume 1 contains high quality, detailed images in nine subject areas which are frequently needed for desktop publishing.



To order, send a cheque or money order for \$44.95 US (\$54.95 Cdn. incl. GST) to: Artistic Software Inc., 55 Selwyn Place, Kanata, Ontario, K2K 1P1, Canada. For more info call (613) 591-6039. Ontario residents add \$4.10 PST.

Dealer Inquiries Invited

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New Products

8 Other Neat Stuff

sional. For more information, contact: ASDG Inc., 925 Stewart St., Madison, WI 53713, (608) 273-6585, Inquiry #239

Communication Systems Engineering

C.S.E.'s phone number in the September New Products section (*ProImage*) was incorrect. The correct number is (603) 883-0223.

Everything You Need To Know About Pro Video Gold

This detailed tutorial video will help you get started on mastering Pro Video Plus and Pro Video Gold. The video is for the beginner to easily conquer the basics for variable page layouts. Learn how to manipulate color palettes, select variable fonts, italics, and develop a complete screen of text. This video will also show professional tricks that can save hours of time. With this video, it's easy to master the skills necessary to triumph to amazingly clear and graphic texts. Suggested retail price: \$59.95, Video Bookshelf, 2405 E. Mt. Hope, Lansing, MI 48910, Inquiry #240

Fantastic Voyage

Centaur Software signed a licensing agreement with 20th Century Fox Corporation, granting the right to develop and market a game for the Amiga based upon the 20th Century Fox film.

Originally released in 1966, *Fantastic Voyage* is a classic science fiction movie which won an Academy Award for Best Special Effects for its depiction of the voyage of a miniturized submarine through the interior of the human body. Around ten years ago, Fox entered the home video game market, releasing a *Fantastic Voyage* video game on cartridge for the Atari 2600.

Centaur's game challenges players to make their way through the human bloodstream in order to destroy a bloodclot in the brain, fighting antagonistic white blood cells, antibodies, and other hazards along the way. The game features "organic" graphics and sound effects unlike anything seen or heard before on the Amiga and will be available for Christmas, 1991. Suggested retail price: \$49.95, Centaur Software, P.O. Box 4400, Redondo Beach, CA 90278, (213) 542-2226, Inquiry #241

Integral Software moves

Integral Software has moved. The new address is: *Integral Software*, 9535 Wessex Place, Louisville, KY 40222, (502) 425-3948, Inquiry #242

ProWrite 3.2 includes PostScript

New Horizons announced an upgrade for ProWrite, their multi-font, color, graphics word processor. In addition to PostScript support, ProWrite now has the ability to import and export *Professional Page* text files. Since PostScript printer owners are increasing at a fast rate within the Amiga community, New Horizons is maintaining a competitive edge and plans to continue enhancing the best-

selling word processor. Current ProWrite owners should contact New Horizons for upgrade information. *New Horizons Software*, P.O. Box 43167, Austin, TX 78745, (512) 328-6650, Inquiry #256

SCAN Symposium

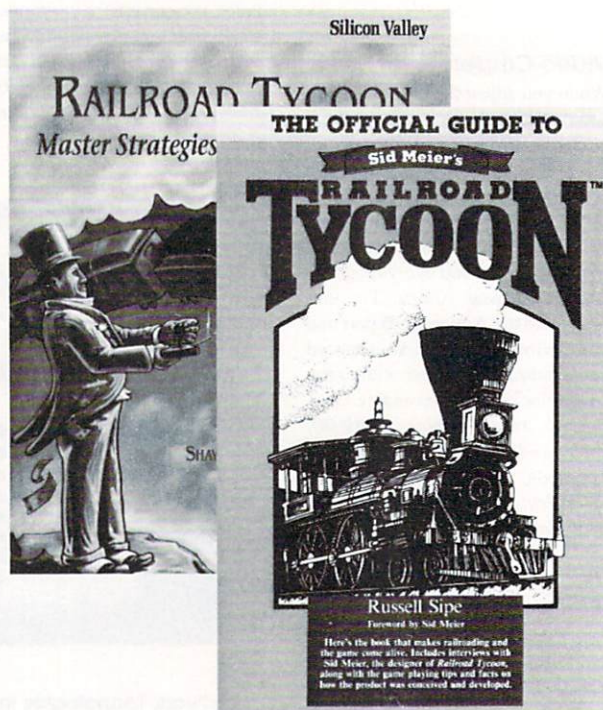
The 1991 Small Computers in the Arts Network Symposium will be held November 15-17, 1991, at The University of the Arts, 320 S. Broad

St., Philadelphia, PA. For more information, contact: SCAN, 5132 Hazel Ave., Philadelphia, PA 19143, (215) 472-2392.

UBI Soft in U.S.


UBI Soft, the well-known publisher of titles such as *Pro Tennis Tour* and *Pick'n Pile*, has opened a U.S. office in Sausalito, CA. Christine Quemard, Managing Director of UBI Soft International, will now be General Manager in the Sausalito office. Christine will oversee all domestic operations, including sales and business development, and will continue to work closely with UBI Studios, the development team in France. Contact: UBI Soft, 15 Atwood Ave., Sausalito, CA 94965, (415) 332-8749, Inquiry #243

•AC•



Two new books for Railroad Tycoon fans

"Powerful programs of growth and adventure"



MasterCard/Visa
1-800-545-6172
(after 5 p.m.)

IBM/Compatibles
and AMIGA

THE MAGIC MIRROR . . . a toolbox for your mind. E. Kinnie, PhD., Clinical Psychologist. \$39.95.

THE MAGIC MOUNTAIN . . . a journey into another reality. Not for children. Specify male or female version. \$29.95 each. Both, \$39.95.

MERLIN . . . an apprenticeship. \$29.95.

I CHING . . . ancient Chinese wisdom and prophecy. \$29.95.

Blue Valley, 29 Shepard St., Walton, NY 13856

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LET'S SEE THE GUY IN THE RED SUIT TOP THIS.

Here's a holiday offer for educators that even Santa will find hard to top.

It's called the Amiga Power Up™ Program. And if you're an educator, it can save you hundreds on an Amiga® 500 computer. Just bring your school ID or business card to an authorized dealer. And save \$143 on an Amiga 500P (off the MSRP of \$642). Or \$200 on an Amiga 500S (off the MSRP of \$599).

The Amiga 500S hooks up to a TV.* It has incredible graphics – with more than 4,000 colors, built-in sound, word processing, and three exciting games.

The Amiga 500P includes one MB of RAM, a word processor, a clock/calendar, paint and

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—AND—
AMIGA 500

music programs and a challenging graphics-oriented game.

The multimedia Amiga has video and animation capabilities, too. With available hardware and software you can create original art, add music and sound effects, and run striking 2-D and 3-D animation.

And behind every Amiga is a 24-hour, toll-free hotline. Plus a limited one-year warranty with pick-up and delivery for warranty repairs.

See your authorized Commodore dealer before January 19. Or call 1-800-66-AMIGA. (In Canada call 1-800-661-AMIGA.) And take advantage of the holiday offer for educators that's in a class by itself.

THE AMIGA POWER UP PROGRAM



Subject to dealer participation. See authorized dealer for details. Not valid with any other offer or special pricing program. Offer may vary in Canada. Offer ends January 19, 1992. Commodore, the Commodore logo, VIC 20, 64, 128, Plus 4 and Pet are trademarks of Commodore Electronics Ltd. Amiga is a trademark of Commodore-Amiga, Inc. *With optional A520 RF modulator.

Circle 173 on Reader Service card.

Connecting the Amiga to the Sharp Wizard

by Miguel Mulet

Unfortunately, numbers often dictate why products are designed for certain computers. If you're a Mac or PC user, you have a wide variety of choices of hand scanners, trackballs, and other accessories. The same is true for the hand-held organizers. If you own a Mac or PC, you can get an interface to hook up a Wizard to either one of these machines. There was no way to exchange information between the Amiga and the Wizard—that is, until now. If you own a Wizard 8000/8200 and an Amiga, and are interested in how you can exchange information between the two, read on.

First things first. This technique will work only with the latest Wizards (8000/8200), as the terminal software is built into these units but not the earlier units (7000/7200). Besides the Wizard, you will also need a special adapter available from Sharp known as the Model CE-132T RS-232 Level Converter, available for \$89.99 from Pygmy Computer Systems, 1-800-44PYGMY. This adapter will allow you to link the Amiga and the Wizard. The last caveat is that you can exchange information only via the MEMO function on the Wizard. In other words, you can't upload/download the schedule or telephone information stored in the Wizard.

Connecting the units together is rather easy. Once you have purchased the Level Converter, you connect it to the SERIAL (RS-232) port of the Amiga. This may require the use of an adapter, in order to connect the two DB-25 connectors together. These adapters are available at most Radio Shack stores.

The DB-25 connector at the end of the Level Converter is female. An Amiga 1000 requires an adapter with two male ends, while an Amiga 500/2000/2500/3000 would not require an adapter. The other end of the level converter is connected to the COMPUTER LINK port of the Wizard, located at the left side of the unit. Lastly, connect the transformer included with the converter into the converter itself, and then plug this into the wall.

You will need terminal software for the Amiga. Any software that can communicate with a modem and transfer ASCII text files should work fine. The Wizard doesn't need any special software, as it is already built in. Once you have connected the hardware, you can turn on both your Amiga and the Wizard. Remember: *never* connect or disconnect accessories from your Wizard or Amiga while the power is on! You'll have to change some settings on both machines, so we'll start with the Wizard first. Don't be taken aback

by the length of these instructions—they're long because they walk you through the process step by step. It really is quite easy!

First, turn on your Wizard by pressing the ON key. If you are using the password protection, enter your password and hit the ENTER key. If not, go on. Next, hit the blue SHIFT key, followed by the OPTION key (the E key). You will get a menu like this:

```
<OPTION>
1 PRINTER
2 UNIT TO UNIT
3 CASSETTE TAPE
4 PC LINK
5 TERMINAL
```

Press the 5 key. You will now see a screen similar to this:

```
<TERMINAL>
1 CONNECT
2 DIALING DIRECTORY
3 MODEM SETTING
```

TO SELECT: Press number
CANCEL:[C.CE]

Press the 2 key next. The following screen will appear:

```
<DIALING DIRECTORY>
1 1200-8N1
2 1200-8N1
3 1200-8N1
4 1200-8N1
5 1200-8N1
6 1200-8N1
TO SELECT: Press number CANCEL:[C.CE]
```

If you have previously entered any information here, the name of the terminals you have already set up will appear next to a number.

For our example, we'll setup the Amiga under #2, but you can use any blank space. If you choose a number with something written next to it, it will erase that information. So, press the number 2 key, or the number key corresponding to where you want this setup stored. The next screen will look like this:

NAME :
NUMBER :
SPEED bps : 300 1200 2400 4800 9600
PARITY : NONE ODD EVEN
DATA BITS : 8 7
STOP BITS : 1 2
XON/XOFF : ON OFF
(DOWN ARROW)

The cursor will appear next to the name, so type a name for this setup, then press ENTER. The cursor will now appear at NUMBER, but since you are connecting the Amiga directly with the Wizard, you do not need to enter a telephone number. Thus, just hit ENTER again.

To select the SPEED, move the cursor with the left and right arrow keys on the Wizard until the speed you desire is highlighted, and then hit ENTER. You can choose any speed shown on the screen; just make sure you set your Amiga for the same speed. For the following requests, I'll give you the parameters I used, which seemed to work well. You may have to adjust them depending on what your settings are. As long as the Amiga and Wizard are using the *same* settings, you shouldn't have any problems. For PARITY, choose NONE. For DATA BITS, choose 8. For STOP BITS, choose 1. For XON/XOFF, choose OFF. After you make the selection for XON/XOFF, the screen on the Wizard will scroll up, offering you more choices. Answer them in the following manner. SHIFT IN/OUT: OFF. 7F CODE CONVERSION: OFF. SEND LF AFTER CR: ON. RECEIVE LF AFTER CR: ON. LOCAL ECHO: ON. DELAY TIME: 0.

After setting the DELAY TIME, a blank screen will appear with the following message:

SEARCHSTRINGS:[S] REPLYSTRING:[R]
WAIT: [W] ("W1" = WAIT FOR 0.1 SECOND)

Just hit the ENTER key one last time, as you don't need to set anything here. After this, the TERMINAL screen will appear once again. For now, we're going to stop and set up the Amiga end of things, so press the C.CE key, and it will return the Wizard to the startup screen.

The Amiga terminal program must be set to the same settings as the Wizard, ie, 9600 baud, 8 data bits, 1 stop bit, and NO parity. (Settings of 7 data bits, 1 stop bit, and EVEN parity also work well). You should set the machine for HALF duplex, and turn the ECHO feature ON so that you can see what you're typing). For file transfers (both uploads and downloads), it is best to use plain ASCII files. The Wizard DOES NOT support any other transfer protocols, so you can't use XMODEM, YMODEM, ZMODEM, etc.

OK, now that you have connected both machines and have equivalent settings for both terminal programs, you're ready to start transferring information between the two. Put your Amiga terminal program into terminal mode as you normally would. On the Wizard, you hit the BLUE SHIFT key, and then the OPTION (E) key. You'll see a menu giving five choices:

```
<OPTION>
1 PRINTER
2 UNIT TO UNIT
3 CASSETTE TAPE
4 PC LINK
5 TERMINAL
```

You want to press 5 for TERMINAL. After pressing this key, you'll be presented with another menu. This menu features three choices:

```
<TERMINAL>
1 CONNECT
```

2 DIALING DIRECTORY
3 MODEM SETTING

TO SELECT: Press number
CANCEL:[C.CE]

You'll want to press 1 for CONNECT. Now you'll see a screen displaying various configurations already stored in the Wizard. You'll want to use the one for the AMIGA, which we made previously. So, press the key corresponding to this entry in the list. In our example, it is key 2.

```
1. CompuServe 1200E71
2. Amiga 9600E71
```

Now you'll have an empty screen, with a blinking cursor in the upper left hand corner. Go ahead and type on both keyboards. What you type should now appear on both the Wizard's and the Amiga's screen. You're in business!

There was no way to exchange information between the Amiga and the Sharp Wizard organizer—that is, until now.

The Wizard's screen is limited to displaying 40 characters at a time, and so if what you type on the Amiga is longer, it disappears off the screen to the right of the Wizard. To see the rest, you have two choices. You can either scroll to the right by hitting the cursor key to the right, or you can set the Wizard to scroll the information in a 40 column format. To do this, get into terminal mode and connect with the Amiga. Now, hit the regular (up arrow) shift key at the lower left corner of the Wizard keyboard, and then hit the MENU key (green letters, the R.CM

key). Now a NEW menu appears:

```
<TERMINAL MENU>
1 UPLOAD
2 DOWNLOAD
3 SEND BREAK-CODE
4 SET DISPLAY WIDTH TO 40 CHARAC-
TERS
5 CONFIGURATION
```

TO SELECT: Press number
CANCEL:[C.CE]

Press the 4 key. The Wizard will now return to terminal mode, but will now scroll lines of greater than 40 characters to the next line.

The TERMINAL MENU, reached by hitting the up arrow Shift key followed by the MENU key is also from where you will upload and download files. Pressing the 1 key will allow you to upload files, and the 2 key downloads files. To upload a file, first set your

on the Wizard. From there, choose 2 DOWNLOAD. From now on, whatever is received from the host machine is stored to a MEMO file. The title of the MEMO file will be the first line transmitted by the Amiga. Don't forget to turn off the download once a file is sent. To do this, access the TERMINAL MENU. Notice that entry 2 has changed to 2 STOP DOWNLOAD. Just press the 2 key, and the file is closed and downloading is halted.

To stop the connection between machines, press the ON key on the Wizard. This will return you to the TERMINAL screen. From there, either you can press the C.CE key returning you to the Main Menu, or you can access any of the other features of the Wizard. To stop things on the Amiga side of things, just choose the disconnect command from your terminal program.

MEMO files on the Wizard are limited to 2048 characters (2K), so the file you download to the Wizard should

not be larger. If it is, the Wizard will accept only the first 2048 characters, and then display a MEMORY FULL error. Also, if you wish to format the Amiga text file so it looks good on the Wizard, you can use the Amiga TAB key to simulate a carriage return; that is, to start a new line, hit the TAB key rather than the RETURN key. If you have trouble connecting the two, look at the "TROUBLESHOOTING" sidebar.

Trouble Shooting

I hope that you won't have any trouble, but if you do, look at these tips.

1. Check all of your connections, and make sure they are secure.
2. If you need to use an adapter, make sure it was *not* a null modem connector. A null modem connector connects line 2 to line 3, and this will prevent proper data transfer. You need to use a *gender* adapter, in all probability.
3. Make sure the settings on both machines are the same. The baud rate, data bits, stop bits, and parity need to be identical on both units.
4. You may wish to use an external battery on your Wizard, as the CE-132 interface is partially run by the batteries in the Wizard. This will cause them to drain much more quickly.
5. Remember to set these parameters on the Wizard:

SHIFT IN/OUT: OFF.
7F CODE CONVERSION: OFF.
SEND LF AFTER CR: ON.
RECEIVE LF AFTER CR: ON.
LOCAL ECHO: ON.
DELAY TIME: 0.

6. If you're having trouble, you can contact me on CompuServe. My number is 72415,1324. I get on only once a week or so, so please be patient.

•AC•

Wizard 8000
Price: \$359.99
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Mahawh, NJ 07430
(201) 529-8200
Inquiry #270

Connecting the units together is rather easy.

Amiga to accept an upload. Make sure you set the Amiga terminal software to accept an ASCII text file. Now, access the TERMINAL MENU and press the 1 key. A screen will appear which will show you all the MEMO files that are currently stored in the organizer. Just choose the number of the file you wish to send, and press the corresponding number key. The file will be quickly uploaded to the Amiga. Once the file has been uploaded—the characters will stop coming up on the Amiga screen—close the file on the Amiga. The Wizard goes back to the terminal mode after the upload, so if you start typing and forget to tell the Amiga to close the file, whatever you type will be added to the file you just uploaded.

Downloading files is also quite easy. Assuming you're still in terminal mode, access the TERMINAL MENU

not be larger. If it is, the Wizard will accept only the first 2048 characters, and then display a MEMORY FULL error. Also, if you wish to format the Amiga text file so it looks good on the Wizard, you can use the Amiga TAB key to simulate a carriage return; that is, to start a new line, hit the TAB key rather than the RETURN key. If you have trouble connecting the two, look at the "TROUBLESHOOTING" sidebar.

Although not the most elegant solution, this link allows you to easily share information between your Amiga and the Wizard. It would be convenient if in the future, software was written for the Amiga in order to exchange *all* the information between both machines. MEMO files are great for reminders, shopping and parts lists, as well as any other miscellaneous infor-

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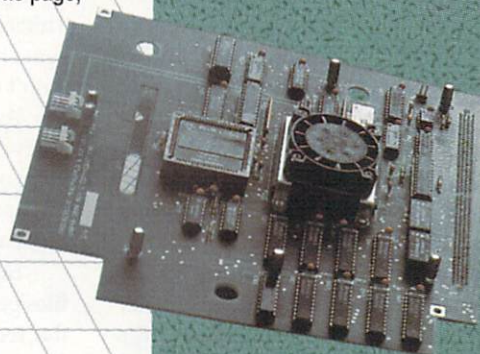
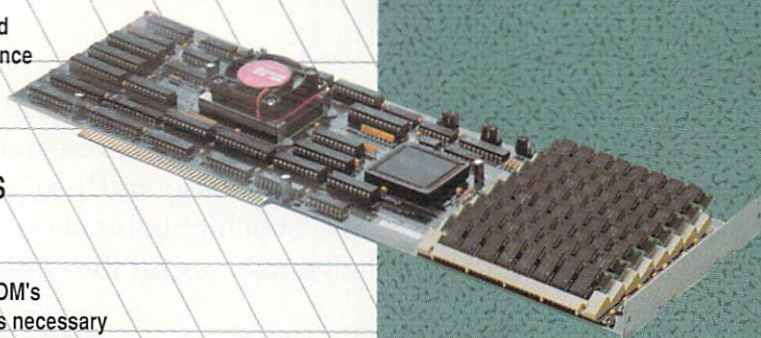
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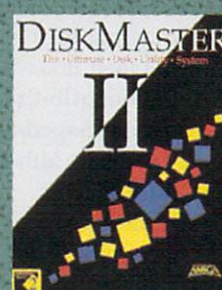
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Superbase 3

vs.

Superbase 4

What's the Difference?

by Rick Manasa

This article is for those already familiar with *Superbase Professional 3.xx* on the Amiga. On my way to getting a handle on this beast, I've researched the essential differences between the two versions, focusing on the database and text editor for this review. If you're already comfortable with *SBPro3*, this list of highlights should tell you all you need to know about the new stuff in this mother of all databases for the Amiga.

Right off the bat, you'll notice a new image to *SBPro4*. The two manuals have been reworked and are bound in two vinyl three-ring binders. Everything from the embossed look of the buttons to the 2.0 style requester shows that Precision kept up on developments in the Amiga field while making it big in the MS-DOS world. In fact, *SBPro4* derives from *SBPro4* Windows in MS-DOS, not from the earlier version of Superbase on the Amiga. We shouldn't grumble too much about Precision's foray into the lucrative MS-DOS market. Many a developer saw the greener pastures that over 60 million PC's worldwide represent and never looked back. Three cheers for Precision for remembering their roots and for bringing all their fine work back home.

Compatibility between earlier versions of Superbase is maintained for the most part, although it is a one-way street. Database, text, forms and related files (function keys, query files, etc.) should be upwardly compatible, while DML commands differ slightly in some instances. The *README.txt*

file describes these differences. A file created in *SBPro3* that is used in *SBPro4* can still be read in *SBPro3*. Compatibility also extends into the Windows world. Files can go both ways without a hitch, while DML programs may need some tweaking. Forms, unfortunately, won't translate across platforms.

As mentioned earlier, *SBPro4* has a new file requester—files on left, devices on right. String gadget defaults to the appropriate file type—"*.sbf" if a database file, "*.sbv" if a form, etc.

Superbase creates so many sets of files per database that this greatly eases the recovery and storage of files and forms. Only the relevant files are displayed at any given time.

There are lots of changes to the File Definition Requester. You have five text attributes instead of three, including Capitalize Words (great for a Cities field where you can have entries like St. Louis and Los Angeles automatically capitalized), and Logical, which only allows Y, N, T or F as valid entries. The other new selection, Allow Returns, lets you include returns in a field, so you

can format a text field with paragraphs and blank lines.

Three different ways to store numbers have been added to the Numeric Field Requester. "Real" numeric fields can hold any numeric value, but they take up the most disk space and they take the longest to perform calculations. This choice is best suited for arithmetic calculations, determining percentages and currency values. "Long" numeric fields hold only integers from -2,147,483,648 to +2,147,483,647 and use a moderate amount of disk space and time to perform calculations. Use this method for determining large values, such as votes cast, inventories and the like. "Integer" fields can only hold integers from -32,768 to +32,767, use the least disk space, and are quickest in operation. Obviously, you'd like to use this method whenever possible.

Create Virtual Fields

You can now create Virtual fields in Superbase. These fields do not need a constant or calculation formula at -

tached. They hold only one byte per record, to tell Superbase that a calculation must be performed. Virtual fields hold information in memory, and thus are great disk space savers, but you may pay for the savings in time.

Superbase calculates the formulas every time you display or edit a field or when another file specifies the Virtual field in a LOOKUP formula. People with large hard drives but the standard 68000 processor might do better without employing Virtual fields in their databases, especially if they use a lot of complex formulas. On the other hand, if you have a 68030 zipping along and find disk space at a premium, working with Virtual fields may save you enough time and aggravation to justify the speed trade-off.

Superbase now allows Composite indices. This involves defining a Virtual field which will concatenate the fields you wish to index. You define a Virtual field, for instance, CCSort.MyBase, and attach a calculation formula to it, adding together, for example, a Country and a City field (Country.MyBase + City.MyBase). This would index your file at two levels, performing a City-within-Country sort. This could list all your cities alphabetically within their respective countries. You can also use a Virtual field to create a multi-field index to use as the basis for sorting in Query Order.

There are many new DML commands, too many to list in this article. Suffice it to say that there are enough new System, File and Index, Reporting, Form Handling, Operator, Math and String functions, and Variable commands to be the basis for another article.

New Sets of DML Commands

There are two completely new sets of DML commands that warrant comment. One deals with commands for transmitting and receiving files via modem (Comms commands). The other is a set of Financial Functions, for determining interest rates, depreciation and other investment-related considerations. SBPro4 does some serious blurring of the line between databases and

spreadsheets with these functions.

One of the major new features of SBPro4 is the ability to convert and edit dBase files. You can import the dBase file, convert it into a SBPro4 file and do all the editing you want, as though you had originally created the application in SBPro4. When you're through, you can export it to a dBase file. If you need only to display a dBase file, you can load it directly into SBPro4 for scanning and browsing.

Switching between an open form and the files it uses is a snap in SBPro4.



Just select one of the View commands in the Set menu, and you'll see the current file in the selected format. This is helpful in designing forms. It allows you to use the Page view as a design scratch pad or template to help you visualize your form's layout as you design your form.

You have much more control over how data and forms are printed in SBPro4. In SBPro3, the only option you had was to print records that matched a filter in Table View format. SBPro4 has its own drivers and driver creation menu item, called Printer Setup. Here you can define margins, font, single sheet, or formfeed, etc., for your printer

and save it to a file. There is now a Print Options requester that pops up when you have a Form open. This lets you choose whether to print a single page or the whole document, in draft or graphics mode, and which class of graphic objects should be printed.

You can include stylesheet tags as text items in a query. This allows you to pre-format query output into something a desktop publishing package could use.

Reorganize a File Using the Same Name

SBPro4 now lets you Reorganize a file using the same name. It makes a temporary backup of your file—called DBXREORG—before processing. This allows you to recover your data if the Reorganization is interrupted for any reason.

You can divide a file into two files with the Process Split command and merge two files into one with the Merge option. This could be especially useful for mailing list management and similar applications.

One of the main features that separates Superbase from your garden variety database is its ability to create and handle more than one file at the same time. The chapter in the manual on multi-file applications describes the concept in detail. The chapter also covers how files should be created, introducing the novice to the ideas of tombstone, transactional and table data, and how they relate to one another in a sophisticated database system.

The manual describes ways to optimize SBPro4's performance.

SBPro4 reads only the parts of the file that it must to perform whatever function it is trying to execute. If you structure your query filters properly and put operators in optimum order, you can minimize the time SBPro4 needs to do its thing.

Remove Record is now called "Cut" and is part of the more standardized Cut-Copy-Paste set of functions we're used to from other Amiga programs. All of these functions use the Clipboard and have the standard Amiga hotkeys attached to them as

well (Amiga-X for Cut, Amiga-C for Copy and Amiga-V for Paste).

SBPro4 allows you to import and export a wide variety of file types. In addition to ASCII fixed length and delimited files, SBPro4 will convert dBase II, III and III+ files as well as files created in *Enable*, *Lotus 1-2-3*, *Microsoft Excel*, *Grafox Logistix*, *Visicalc*, and *Superplan*. SBPro3 could import and export only ASCII files, dBase II and III, Lotus, Logistix, and DIF files.

The Text editor in SBPro4 has more similarities with its predecessor than differences. It does allow you to Save As, which SBPro3 didn't. SBPro4 allows you to reformat text manually with the Edit Reformat menu item. There is now a Margins command to

supported by SBPro3. There is a pin-out diagram to help you be sure that you are wired correctly. This will minimize the risk of frying your system when hooking it up to another while attempting a data transfer over RS-232 lines.

Supports PCX and GIF Image Types

SBPro4 now supports PCX (PC Paintbrush) and GIF (CompuServe Graphics Interchange Format) image types in addition to the Amiga IFF files. You can also scale the image and force the aspect ratio to be preserved, as well as mapping the colors of the image to a form's default palette, mapping the form's colors to the image's palette and

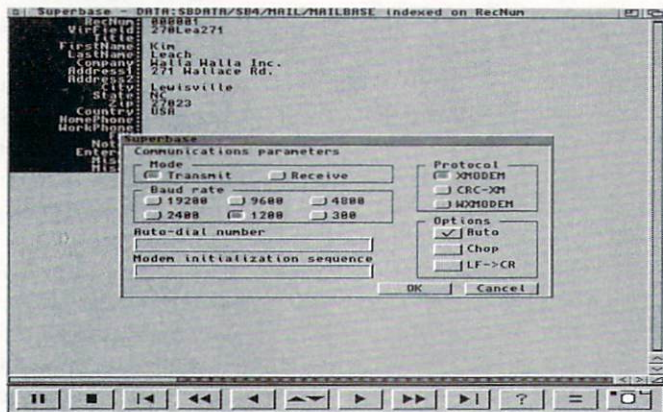
new version of Superbase. For those with sophisticated sound, graphics, and data applications, SBPro4 can serve as a multimedia presentation package—not bad for a program that started life in the less glitzy arenas of number crunching and data management.

The function keys have been reworked to match more closely the setup in the MS-DOS version. There are now 40 possible locations for applications instead of the 21 locations in SBPro3. These correspond to the ten function keys with one of four qualifiers: No qualifier, Shift, Control and Shift Control. I for one will miss the Help key location available in SBPro3. It seems an ideal location from which to pull up a set of help screens. The manual says you can list all the assignments you've made to the function keys by selecting Function Keys List from the Set menu.

I've had no luck with this as of yet. I get a "Incomplete—field or value missing" requester whenever I try to list the function key assignments.

The Utilities remain the same, but there is now a Print selection in the Project menu. Selecting this command allows you to printout the Directory List, Status File, Status System, and

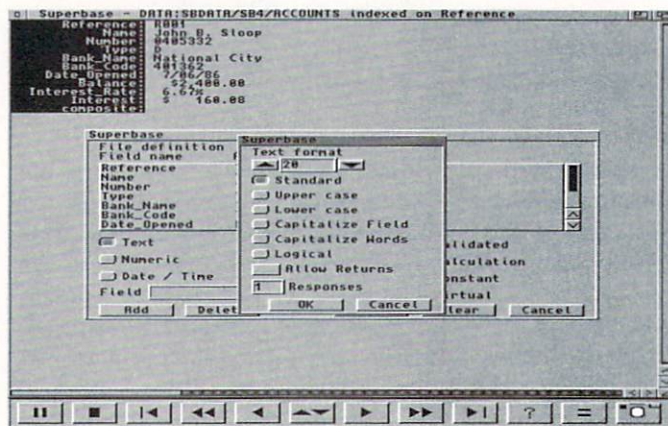
You can "burn" up the lines transferring data at 19200 baud with SBPro4.



supplement the Ruler in the Text Editor. This gives you extra and specific controls over document format and the formatting of imported ASCII text files. Finally, the editor now provides a Search and Replace facility, similar to what you might find in a dedicated word processor or text editor.

One of the more apparent changes in SBPro4 is in the Labels Requester. This screen now lets you place the fields on a layout grid that will give you a graphic representation of how your labels will look—no more guessing how the output will appear. You can save your layout to disk for future use. Loading a saved Label format will automatically open the associated files as well.

The Communications module now supports 19200 baud rate in addition to the 9600, 4800, 2400, 1200 and 300 rates



There are now five text attributes to choose from in the File Definition Requester.

mapping the image to a gray scale. If the image is smaller than a full screen, SBPro4 now allows you to specify whether the image should be centered, placed in the upper left corner or in the lower right corner. As you can tell, there is a lot more image control in this

Disk File as it would appear on the screen.

There are some new entries in the System Options. You can hide the browsing control panel and set the Amiga to convert ANSI files. You can put the currency sign at the end of the

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Macro68 macro assembler

Macro68 is the *most* powerful assembler for the entire line of Amiga personal computers.

Macro68 supports the entire Motorola M68000 Family including the MC68030 and MC68040 CPUs, MC68882 FPU and MC68851 MMU. The Amiga Copper is supported also.

This fast, multi-pass assembler supports the new Motorola M68000 Family assembly language syntax, and comes with a utility to convert old-style syntax source code painlessly. The new syntax was developed by Motorola specifically to support the addressing capabilities of the new generation of CPUs. Old-style syntax is also supported, at slightly reduced assembly speeds.

Most features of **Macro68** are limited only by available memory. It also boasts macro power unparalleled in products of this class. There are many new and innovative assembler directives. For instance, a special structure offset directive assures maximum compatibility with the Amiga's interface conventions. A frame offset directive makes dealing with stack storage easy. Full listing control, including cross-referenced listings, is standard. A user-accessible file provides the ability to customize directives and run-time messages from the assembler.

Macro68 is fully re-entrant, and may be made resident. An AREXX™ interface provides "real-time" communication with the editor of your choice. A number of directives enable **Macro68** to communicate with AmigaDOS™. External programs may be invoked on either pass, and the results interpreted. Possibly the most unique feature of **Macro68** is the use of a shared-library, which allows resident preassembled include files for incredibly fast assemblies.

Macro68 is compatible with the directives used by most popular assemblers. Output file formats include executable object, linkable object, binary image, and Motorola S records. **Macro68** requires at least 1 meg of memory.

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amount instead of at the beginning. You can set SBPro4 to see fixed-length separators instead of delimiters for fixed-length ASCII files. You can do some things that aren't explained in the manual, like selecting Num Lock or changing the Unit number. You can even change what SBPro4 sees as the serial device! This may be useful for telecommunications systems that transfer data over special serial cards or in some other way bypass the standard serial device.

You can now specify whether the field names are displayed. This lets you make a quick and dirty print format that contains only the data from a file.

If you select Num Lock from the System Options, you can use the numeric pad to position the cursor at the beginning of a field (HOME) or end of a field (END) as well as switch between Insert and Typeover modes (INS).

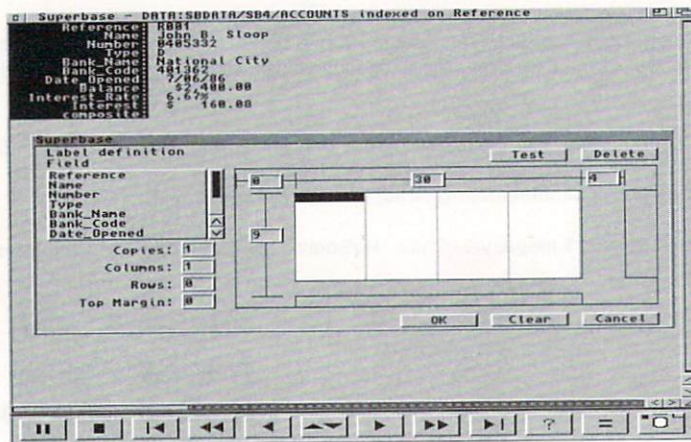
You can now choose between ascending (default) and descending order for your indices.

to do. I'm used to using Left Amiga-J to shuffle my windows. In SBPro4, Left Amiga-J opens the Form Editor, as does Right Amiga-J. I wish you could defeat this. Anyhow, here's a list of the new hotkey equivalents I've seen:

Expanded Hotkeys List

Amiga-"J"—Open Form
Amiga "-"—Close File
Amiga-"M"—Modify File
Amiga-"Q"—Quit
Amiga-"C"—Copy
Amiga-"X"—Cut
Amiga-"V"—Paste
Amiga-"D"—Duplicate Record
Amiga-">"—Next External
Amiga-"<"—Previous External
Amiga-"?"—Query Edit
Amiga-"W"—Query Open
Amiga-"U"—Update
Amiga-"/"—Edit DML
Amiga-"="—Field Selection
Amiga-"L"—Directory List
Amiga-"H"—Text Editor
Amiga-"G"—Run DML
Amiga-"K"—Edit Function Keys

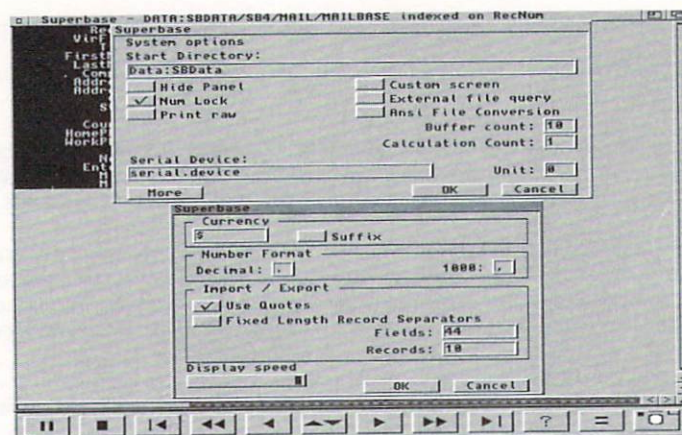
The Label Definition requester lets you see how your labels will look in final form and save that definition.



There are a lot of little things that have been added or changed that don't fall into a convenient category, but that help make the designing and use of applications just a little easier. These details must have been the product of working with the program over a long period of time, adjusting this, simplifying that, to make the package more ergonomic, if you will. Take a deep breath as we go through the list of miscellaneous enhancements.

- "-" & "+" scroll through indices and open files respectively.
- You can create indices based on multiple fields.
- No dongle (hallelujah!).
- Can now store global file updates.

It is now possible to create an empty copy of a file. This would be useful for reorganizing a database, or setting up a duplicate database to import a different set of data into.



There are many new features for customizing SBPro4 in the System Options, including changing the serial device.

Open fields are now called Selected fields and Edit Fields is now called Modify File and has a hotkey (AM) attached to it.

Speaking of hotkeys, there are a lot more of them in SBPro4.

Each hotkey is assigned to both the Right Amiga and the Left Amiga, or Commodore key. This makes shifting between screens and windows tough

I spent a lot of time defining my own hotkeys for SBPro3 with MachIII. I won't have to do as much of that with SBPro4.

So how do we improve such a comprehensive package? Well, we can start by making it easier to get a handle on it. Providing a tutorial at the end of the manual is better than no tutorial at all, but you have to wonder at this decision. Is the new user supposed to

read the whole manual before he tries anything? It would be better to put the tutorial at the beginning of the manual, or have a tutorial wind up each chapter.

There was a tentative attempt at a newsletter for Superbase, designed to provide ongoing support and input from the company, and with good reason. The original Superbase Professional wasn't exactly a lightweight database. With SBPro4 the need is even greater. One hopes that once the dust settles at Precision, they will reinstitute this service.

SBPro4 is so powerful, it fairly screams for a set of on-disk tutorials and starter applications. What a great project/product for some enterprising third-party developer!

The model for customer support in my book has got to be the WordPerfect Corporation. A toll-free number and no charge for support help set the standard by which I judge all customer support services. Perhaps we can start seeing this type of consideration for its customers, when SBPro4 gets settled in its new home.

SBPro3 would always pop up a requester before you were about to write over a file or program and when you were ready to quit.

One of the disconcerting changes has been the removal of these safety nets. I'd rather have the option to use them or not. Too many times I've almost left the program by mistake or hit a Save function without intending to. I'll have to be more careful with SBPro4.

You get one entry after every Record Save. This gets very annoying with a lot of data to enter at one time. Here's a case where the extra step doesn't enhance security. I'll have to read the manual more thoroughly in hopes of finding a way around this.

Superbase has always been able to perform basic housekeeping functions—copying, deleting, rename files, etc. Since Superbase databases are composed of many files, it would seem to make sense to have the in-program utilities operate on these groups instead of only on one file at a time. Since there is no way to set a wild card, you

must, for example, delete the file definition, then go back and delete that file's indices, the main data file, etc. The manual rightly states that you would be better off leaving Superbase and performing these tasks from AmigaDOS. A pattern-matching wild card system like the one employed by AmigaDOS would go a long way towards making this aspect of Superbase more useful and usable.

With the ability to handle up to one billion records with 4000 characters per field, it's hard to imagine an application too large for this new version of Superbase. You'd have to be trying to count the stars in the sky or keep track of the national debt to tax this puppy. While it asks a lot from the user trying to master all its aspects, it's hard to fault the power and execution of the program. It is so far beyond anything else I've seen on the Amiga as to being in a class by itself. Whether you are a professional with a set of

powerhouse applications or someone with more modest needs, SBPro4 stands as one of the most complete and powerful database tools on any PC platform today. •AC•

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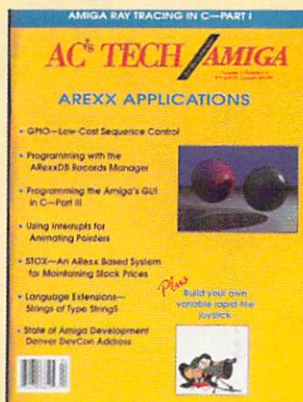
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EPSON'S ES-300C Flat Bed Scanner

by Merrill Callaway

THE FIRST TIME I saw a demonstration of the Epson ES-300C 600 dpi (dots per inch) flatbed scanner, it was hooked up to an Amiga 2500 running ASDG software at our local Amiga User Group meeting. Our local Amiga dealer contributes to the overall quality of our nerd-bonding by bringing over interesting equipment from time to time. This brief demonstration alone sold me on this machine. I am even more impressed now that I have had a chance to use it myself, and perform some in-depth testing.

If you are an artist, a videographer, a desk-top publisher, or anyone else who needs to input images of actual objects, drawings, or photographs into your Amiga, then you will eventually

need some sort of digitizing equipment. There are two ways to do this: via a video camera, or by way of a scanner. A "video digitizer" receives the light through a video camera, which does

the scanning, while a "scanner" makes its own light and mechanically moves it across the image area or "bed," much as a copy machine does. In both cases the image ends up "scanned" as well as "digitized," but the convention has sprung up that video systems are "digitizers" and flatbed mechanical scanners are "scanners." I use that convention here, even though it isn't strictly accurate. Both approaches require software and perhaps a special cable or hardware that plugs into the parallel port. Some Amigans opt for a Digi-View video digitizer package because of its relatively low price compared to a good flatbed scanner; the Epson ES-300C costs about \$1500 including ASDG driver software and special cable. Video digitizers have a unique place in digitizing 3-D objects, or capturing output from a video source, but the quality of the image produced just cannot compare to the outstanding image quality of an excellent flatbed scanner, such as this Epson product. The image quality of so-called "hand scanners" also falls far short of what this Epson will produce. If your material is flat or nearly flat—anything you could photocopy—then the best option is to go with this Epson. Even if it's three times the price of a video digitizer package, the image quality is much more than three times better. I also recommend the Epson specifically over the competition, not only for its high quality and ease of use, but also because of the superior software by ASDG, and the fact that it merges seamlessly with *Art Department Professional (ADPro)*, also by ASDG. Together, they make an unbeatable combination. Let's take a look at this system, and you will see why I've put my conclusions and highest recommendation up front instead of at the end.

Small Foot Print and Light Weight

The Scanner itself is 12.5"W x 20"L x 5"D and weighs about 15 pounds, so it's easy to use on a desktop and put away after you've finished. On its own, the Epson has the capability to scan directly into your printer via a serial port. To set it up with an Amiga, all you do is plug the ASDG special cable into



Photo of "Bug Rug," a sculpture by Thomas Powell, scanned at 240 dpi in 24-bit color.

the ES-300C's parallel port and the other end into the parallel port of your Amiga, connect the power cord, and turn it on. There are a few initial set-up procedures for a brand new machine covered in the ES-300C manual, but these are done only once. A green ready light comes on in a few seconds. This is all you'll ever do on the ES-300C except load images to scan. The ASDG driver software fully emulates all settings and controls on your computer screen.

The installation of the software is simplicity itself: click on the install icon for which version you want. There is a stand-alone module for those who do not have ADPro, and an ES-300C loader for those who do. They work almost identically, except that the stand-alone version saves your image data to a file instead of loading it into ADPro. This is a handy option even for those of us who own ADPro, because by saving directly to disk, you can save files much larger than you can manipulate in ADPro, and believe me, the files get huge very quickly. You will not be able to do anything to them without the necessary RAM, however. I can think of times, though, when you are simply going to export to another platform, that you could use this advantage. I cannot imagine anyone not having ADPro to take advantage of the power of this equipment. If you do not have ADPro installed, you must also copy a requester library to your Libs: directory. That's it! Now we will use the interface and see how it works. I will discuss the features as if you have ADPro, as I feel this is the way the majority of users will access the ES-300C. If you use the stand-alone module, you just run the stand-alone program whenever I mention using the ES-300C loader.

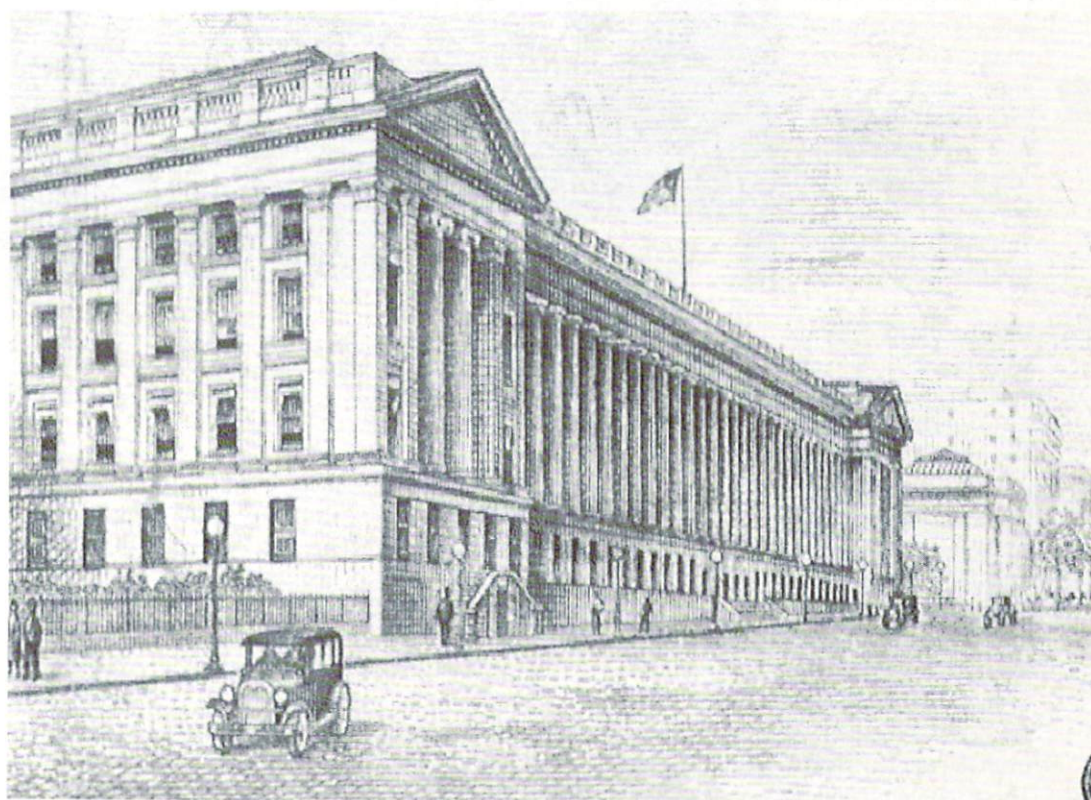
There are no problems at all with operating the hardware or the software.

After you get into the loader module, in general there are two requesters to deal with, a Preview Requester and a Fine Scan requester. The preview allows you to quickly locate the area you want by scanning in 16-color dithered gray scale. When the image area is to your liking, you click on the Accept button and are taken to the Fine Scan requester, which allows you to make the final scan in the resolution you want and in color or gray scale. You can go

from one requester to the other without losing any settings. The image area itself is controlled by means of an image area box (called the Select Box in the manual) that you can size and locate over any part of the image you want to scan in preview mode. Once you enter Fine Scan mode, the image area is locked in until you go back to preview mode.

Saved by the "Oops" Factor

From ADPro you click on the bar for loaders in the upper right of the main screen until you see the Epson ES-300C loader appear. Then you click on "load" in the upper right section of the ADPro screen and you'll see the preview screen which looks something like the picture on page 36, without the scanned image of the eclipse, of course. A likeness of the bed of the scanner comes up bordered by rulers oriented as if you were inside the scanner looking up at the image to be scanned. The maximum scan area is 8.5" x 11.7". The maximum scan area will be outlined with a white image area box with eight small drag gadgets on it, one in each corner and one at the center of each



side. By clicking and holding the left mouse button with the pointer over one of these small drag gadgets, you can size the image box. By clicking and dragging with the pointer inside the image area Select Box instead of over a drag gadget, you can drag the whole image area box around in the image area. An 8 x 10 picture of the solar eclipse had been loaded into the ES-300C, and after the first preview scan, I changed the size of the image box with the drag gadgets before I made this screen shot. The next time you click on the scan button in the preview requester, only the area inside the image box will be scanned, so you will zoom in on the smaller area outlined by the Select Box. Every time you re-scan, the software includes an "oops" factor by including a bit more of the image than the exact size of the image box, though the image box remains exactly the same. This is to allow you to back up or zoom out a little if you should make a mistake, because there is no "zoom out" feature. If you go into the image too far, you must either click on the full bed button and start over or use the "oops" factor several times by expanding the image Select box and re-scanning.

Mouse and Keyboard Control

Now let's look at the Preview Requester itself, from top to bottom. At the top is a drag bar; a "shrink" or iconify gadget; and a front to back gadget as in any typical Amiga window. You can click-drag on the bar and move the requester out of the way or reduce it to just the top bar without losing any settings. Below this bar are four string gadgets with numbers in them. They show the dimensions in inches of the image area outlined by the Select Box as well as its X and Y offsets from the origin, where the rulers meet. These numbers change dynamically as you drag or size the image Select Box.

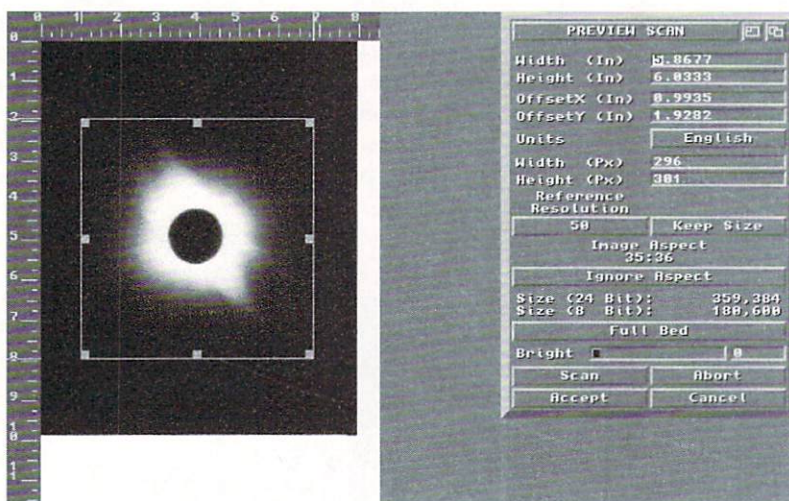
The scan mode button toggles between 8-bit gray and 24-bit color.

By clicking inside the string itself and entering numbers, you may also insert numbers from the keyboard, and the image area box will snap to match your new numbers. Below these string gadgets is a units button with "English" on it. This is a toggle between English

Below the pixel information we get two more buttons, a Reference Resolution button and a toggle button for "Keep Size" (shown), and "Keep Pixels." The Reference Resolution button shows you how much RAM ADPro will take to scan the image in either 24-bit color, or 8-bit gray scale at any particular resolution. You can also control the image area indirectly with this button, as we will see. This button operates like others in ADPro, in that it is a button requester. You click on the right side of the button and it cycles up through the 19 levels of resolutions, ranging from 50 to 600 dpi; and clicking on the left cycles down through the possibilities. The next button is a toggle to determine whether to keep the size constant or the pixels constant. When you select Keep Pixels, then the values

you enter into the pixel width and height gadgets mentioned above will become locked. Then if you click on the reference resolution, the image area Select Box will change dynamically and so will the various measurement string gadgets, but the number of pixels will remain constant. Thus, if you want to scan something using no more than 640 by 400 pixels, you can choose keep pixels, set the pixel

strings to 640 width and 400 height, and then cycle through the Reference Resolution button and watch what image size you get at various resolutions. I noticed that if the resolution is set to a value that causes the pixel gadgets to display numbers lower than the values you want to enter, the gadgets will not accept a higher number of pixels. You must set the resolution to a value that makes the pixel gadgets display a number of pixels higher than you want to set and only then can you set them to a lower value. In other words, you can't force the scan to use more pixels than it needs. Using this feature, and the Keep



Preview requester and screen displaying a scanned photo of a recent eclipse.

measurements and metric. If you toggle into metric, all rulers and string gadgets will change to centimeters. The ES-300C itself doesn't even have dual scales! Below the actual measurements are two string gadgets with the image area in pixels, which also change dynamically as you re-size the Select Box. The pixels behave in a little more complex way than the measurements, because they are dependent upon a number of other buttons, discussed below. Under the right conditions you can set these pixels from the keyboard as well.

Aspect feature discussed below, you can scan a very clean, magnified view of something that will fit exactly the proportions of your screen.

RAM vs. Image Size

The Keep Size choice is the opposite. It maintains the image size constant (in inches, for instance), but the width and height in pixels change dynamically with your choices in the Reference Resolution button. This is the choice to make when you want a super-bitmap larger than your screen, or a large area to scan in higher resolutions. You must be careful as this choice directly affects your RAM and system requirements. The manual contains advice about memory considerations such as performing a MergeMem in your startup, installing as much RAM as you can—the best choice—and other recommendations. Whether you keep pixels or keep size, if you change the image area Select Box by dragging any of the drag gadgets, the number of pixels and the size will change. The locked pixel count stays constant only if you do not re-size the Select Box directly. Also, moving it by click-dragging inside it does not change the pixel count.

The next button down toggles between Keep and Ignore Image Aspect. Above the button is a display which shows the current aspect ratio. When you ignore image aspect, the image Select Box over your image can be made any proportion at all; whereas if you keep the aspect, the proportions in your Select Box stay constant. Keeping the image aspect is particularly useful if you intend to make an image that fills the screen in some particular screen resolution, say for instance in a 640 x 400 high resolution screen. The manual doesn't go into detail about this, but in my experience, the easiest way to determine a scanned image aspect that matches a particular screen aspect is to turn this button to "Ignore," drag the image area Select Box over against the rulers, when the screen is in full bed display, and position its edges so that you can actually measure the aspect directly. In the above 640 x 400 screen, you have an aspect of 1.6 (640 divided by 400 = 1.6). So with the width of the

box set at 8.0 inches, the height should be set at 5.0 inches, as 8 divided by 1.6 as well. This will take care of the high resolution (640 x 400) and low resolution (320 x 200) Amiga screens—well, almost. Because you are going from square pixels in the ES-300C, to "tall" pixels in the Amiga display, you will need to re-scale (inside ADPro) your image's vertical height to about 86% of the height it came in at, to be perfect. You will notice this "too tall" phenomenon if you scan a circle, and it ends up looking like an egg standing on end. Meanwhile, go back and toggle Keep Image Aspect and you will always have your screen's aspect ratio to move around on the image area. If you plan to render in medium resolution (320 x 400 low-res interlace, for AHAM, etc.), you will need to do a bit more in ADPro. You must re-scale the data to make an image rendered in medium resolution come out not looking really "squashed." This is so because interlaced screen displays and square pixel devices (the ES-300C) don't mix very well. There is a real need for a button on

the ES-300C loader to select a medium-res mode of transforming (scaling) and loading the data, because you get the best color on the Amiga in low-res, interlaced format. That's where all the HAM, and AHAM 4096 color palette displays reside! The way it stands, you must do some re-scaling on the ADPro side to get satisfactory results. That is properly on the ADPro side, so I won't discuss it much here, but the whole problem of pixel aspects, interlace, and image aspects is discussed a little later.

This is where there is opportunity for improvement. Things could definitely be made easier regarding the standard Amiga screens. Back in the ES-300C loader, I would like to see an additional display that shows the result of the division as well as the "35:36" type of aspect display. This would make life easier. A button requester like the Reference Resolution button, that cycled through various standard Amiga screen aspect ratios (by name: hi-res 640x400; low-res 320x200; med-res 320x400) would be even better. Choosing one would automatically set and

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lock the image aspect ratio, and set the program to transform the data into Amiga display with no further work on the user's part. The scaling transformer program could also reside in ADPro for those who don't use the ES-300C. I feel the majority of images scanned will be for screen output, so this feature would be most welcome.

Below the Reference Resolution and the Keep/Ignore Image Aspect buttons is a display of the amount of RAM necessary for the proposed scan currently set. This of course is necessary to prevent crashes. If the numbers are white, you are OK to scan; if they turn black, you have to back off on resolution, image size, or both.

Settings Are Sticky Logic

The lower part of the requester has a Full Bed button, which serves as a cancel and go-home function as it will put everything back to the full bed size as when you first entered the loader. Below this is a bright slider to adjust how bright the preview scan is on a scale of 0 to 100. You adjust with a click and drag action, or by entering a value from the keyboard in the string gadget. You must re-scan to see the results. Below the bright adjust are four buttons to (preview) scan; accept (go to the final scan requester); Abort (stop a preview scan in progress); and cancel (exit the loader to ADPro or just plain exit in the stand alone module). All settings are sticky logic, so if you cancel you will find your settings preserved. The abort button is handy for when your material to be scanned or area of interest is smaller than the scanner bed. When you notice that the image area you want has been scanned, you may abort. Your image is not lost, and you do not have to scan the entire bed each time. That completes the preview requester. Now we'll look in on the Fine Scan Requester.

The Fine Scan Requester is much like the preview scan requester. It has a drag bar and gadgets at the top that function exactly like the ones mentioned before. Below the drag bar the pixel displays show the same numbers as in the preview gadgets, but here you cannot change them directly: they are only displays. The resolution button

This is intuitive
and user-friendly
software
even though
it does
complex things.

behaves as before and you use this one to select the final resolution of your fine scan. The resolution comes up the first time with the numbers previously shown in the preview display. You can change the resolution and the pixel displays above it will reflect your selection. The scan mode button toggles between 8-bit gray and 24-bit color. The zoom gadget reduces or enlarges the final scan in the ES-300C hardware. Because it uses a crude duplicate-or-skip pixels algorithm to zoom in or out, it doesn't work nearly as well as the sophisticated ADPro scaling software, so do not use this unless you are using the ES-300C without ADPro, and have no other options. A memory display shows the memory you'll need to do the scan. If the numbers are black, you have to go to a lower resolution. The brightness control button goes from -3 to 3 in steps of 1, but otherwise works just like its companion before, except that it affects the final scan. The gamma button is supposed to be left set to

In case you
missed the first
paragraph,
I give
the Epson 300C
my highest
recommendation.

"CRT A" for all normal Amiga displays. The same goes for the color correction button: leave it set to CRT Display. The other functions of these buttons are described in the Epson ES-300C manual, which I didn't get a chance to study. The ASDG manual points out that these are rarely needed on an Amiga and were included only for completeness in driving the hardware entirely from the software. This is the attention to details that I so admire in ASDG software. The preview button returns you to the preview requester; the accept button starts the fine scan; and the quit button puts you back to ADPro or your system, if you use the stand-alone module.

Finally there is the manual. Perfect software requires no manual at all, but since this is an imperfect world, a manual is required here, but not much of one. This is intuitive and user-friendly software even though it does complex things. The manual is adequate to learn to use the features and controls, but in something as complex as image processing, with the myriad of formats and aspect ratios, and other complicated matters, a little more meat in the overall theory or some hands-on examples would be welcome. For example, try scanning in an image and then try to render it first in high-res 16 color, then in AHAM. You will find you need to adjust its scale to render it in AHAM. If you are already familiar with ADPro, the reason you need to do this is understandable. Beginners will perhaps find it difficult to deal with. At any rate, the manual for the ES-300C loader operation is adequate, but the user is responsible for knowing how to use what he or she gets.

An Area of Irritation

My only area of irritation centers around pixel aspects and image aspects in both ADPro and the ES-300C loader. A short discussion of this problem in their manuals is not really enough. If you've made computer graphics for very long, you'll have faced down this tedious bugaboo many times: the Amiga's pixels are taller than they are wide, so communication to or from a "square pixel" device requires some

image manipulation—going both ways—before the image is true to the original. Rendering images in low-res interlace mode further compounds the possibilities and the problems. I mentioned above that if ASDG added an image aspect requester button to automatically snap the Select Box to match standard Amiga screen formats, users would welcome it. I also recommend that in the ADPro program, too, whenever possible, the software should have the capability to set defaults and perform a coordinated set of operations keyed to specific devices or formats by name, as it does for Amiga screen formats inside the Set_Pixel_Aspect operator. Unfortunately the Set_Pixel_Aspect operator does not affect the displayed image: I have yet to discover what it really does, and the only mention of it is a few cryptic and opaque lines in the upgrade software Late News read-me file. Things should tend to the automatic rather than making the user do any arithmetic, at least for the named formats. Any aspect ratio should display the result of the division as a single number, too, not just as two numbers separated by a colon. There ought to be a way to enter a single ratio number into a string gadget, say 1.6, and make the software and all related boxes and gadgets set themselves accordingly. As far as scaling is concerned, even though the arithmetic is trivial, who wants to repeatedly re-scale and “squash” their images to 86% of their Amiga display height before the Amiga image is true to the image coming in from this scanning device with square pixels? Why not have the option of letting the software do this inside the loader, and the ability for the user to save defaults and tweak the parameters if necessary to match their monitor? Why not have savers to square pixel devices make the output 1.16 times as tall? This problem is easily surmountable by writing an ARexx macro to process the image exactly to your requirements, but, again, few have the inclination or take the time to write such a macro. Perhaps the best way would be to have a configurable key so that users could make and save several custom scaling operator configurations

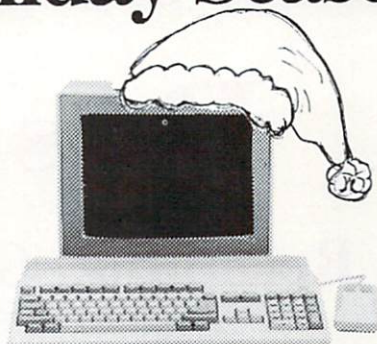
and name them to match the devices they use. At the very least, a generic “to a square pixel device” and “from a square pixel device” scaling button would be most welcome in the scaling operator window. These are properly recommendations about ADPro, but since it is so intimately related to the ES-300C loader, I have mentioned them here. Do not conclude that any of these annoyances will go untended for long. I know that the folks at ASDG care about improvements and suggestions, or I wouldn’t have spent the time to think my suggestions through. They are hard at work on an improved version even as you read this.

In case you missed the first paragraph, I give the Epson ES-300C flat bed scanner and the ASDG software driver/loader my highest recommendation. There are no problems at all with operating the hardware or the software, and the interface and usability are elegant and straightforward. The machine reproduces extremely fine detail as you can tell from the example

pictures. I have tried to include a cross section of examples. It also renders 24-bit color true to the original. I intend to own an Epson ES-300C at my earliest opportunity.

•AC•

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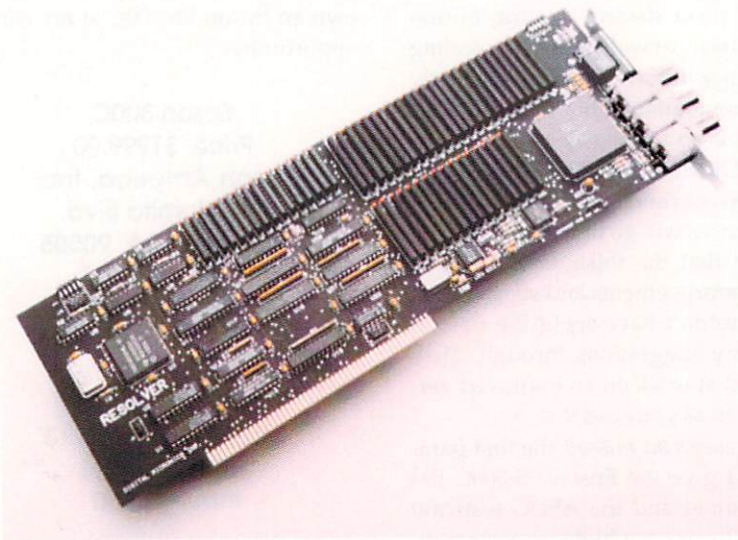
DIGITAL MICRONICS'

Resolver

High Resolution Graphics Display Card

by Merrill Callaway

FOR QUITE A WHILE NOW, some people have criticized the Amiga for its lack of resolution and number of displayable colors compared to the Macintosh computer's color graphics capabilities. Thanks to a company called Digital Micronics, Inc. (DMI), those days are now over, and good riddance. If truth were told, the real reason behind the criticism was that resolution and displayable colors were the only area of superiority remaining to the Mac. Then 24-bit color display cards came out for the Amiga and the color issue died. Now DMI has



Digital Micronics, Inc.'s New Resolver Graphics Co-Processor.

killed the resolution issue as well. I buried the last of any residual inferiority I felt about my Amiga the day I received the DMI Resolver card. Are you ready for this? The Resolver is fully programmable to display up to 1280 by 1024 pixels with 256 displayable colors (8-bit color) out of a palette of 16.7 million colors! The DMI Resolver uses the industry standard, and state-of-the-art, Texas Instruments 60 MHz T.I.G.A. TI TMS34010 graphics processor. T.I.G.A. stands for Texas Instruments Graphics Architecture. This is the same chip used in TARGA boards and other high-end work station equipment.

Memory and More

All DMI Resolvers come standard with 2 MB of programmable memory DRAM and can be upgraded to 8 MB in 2 MB increments. This is memory used by programs displaying their output via the board. As a graphics co-proces-

- ✓ **1280x1024 Resolution**
- ✓ **8-bit Color Graphics**
- ✓ **16-million Color Palette**
- ✓ **60MHz Processor**
- ✓ **Programmable Resolution**

sor the Resolver allows your application software to run independently of the rest of your Amiga. This is not merely multitasking, it is multiprocessing! The displayable resolution depends upon the amount of Video RAM (VRAM) you have aboard, which can also be upgraded, and what kind of monitor you use. All DMI Resolvers provide specially dedicated VRAM for 16 color overlay planes such as pull-down menus. What this means is that your menu action will be virtually instantaneous in application software that supports the card. It is not necessary to refresh the whole screen, because the menus use dedicated memory. This is good news for people using display-intensive application software such as CAD programs. The operative words here are "work station display quality." The DMI advanced models offer double buffering so that one image can be loading while another is being displayed. Real-time animation at up to 60 frames per second is possible with double buffering enabled. There are three models: A, B, and C which differ only in the amount of VRAM aboard. Model A will display up to 1024x768, not double buffered, which is the maximum of most multi-sync monitors anyway. Model B will display a double-

buffered 1024x768 or a non-double-buffered 1280x1024 display, and finally, Model C will do a 1280x1024 double-buffered display. Isn't it time you traded in your old Model T?

The card is a standard full size card that fits into an Amiga slot. I installed it with a minimum of fuss in an Amiga 3000. The top slot is recommended, although any one can be used. There is not room to put the BNC connectors through a lower slot and also engage the retainer slot on the front of the machine. I can't really recommend using a shoehorn or bending the card. If you must install the DMI in a lower slot, expect to do some serious disassembly of your A-3000, and I'm not

sure it will work even then without springing some chassis sheet metal—not what I call a class A fit! I lay the entire responsibility for the fit problem on Commodore, however. They could easily have better thought out the expansion part of their chassis. These unnecessary space problems in the A-3000 are well known, for instance, the Toaster. I wasn't using the top slot, so I managed to put the card there. It was a little tight but I got a good fit. There will, of course, be no problem on an A-2000 as there is plenty of room in its chassis and the cards mount edgewise rather than horizontally.

The business end of the card has one VGA type DB-15 connector and three BNC video connectors for separate RGB outputs to a monitor with inputs for each color. DMI sells a line of monitors to go with their card. Yes, Martha, you need two monitors because not every kind of software drives this card, not yet. You won't see your WorkBench through this card until the day the system software itself supports the card. What if you don't have, or can't afford, two monitors? One solution for those with only one monitor is to buy a fairly inexpensive DB-15 cable switch box, so you can switch from one display outlet to the other and send it to

The operative
words here are
"workstation
display
quality."

one monitor. They sell these for people who have two computers and only one monitor. First, make sure your monitor will be able to accept the increased resolution offered by the card (see below). One feature DMI includes on their line of monitors is a built-in switch to allow you to go from WorkBench to the hi-res display and back again, so if you haven't a hi-res monitor yet, seriously consider getting theirs. The ultimate solution is to get a DMI 1280x1024 monitor for around two grand. That should help to resolve your solvency, too. As long as we are talking money, the list price for the Model A Resolver is \$1295; the Model B sells for \$1749; and the Model C goes for \$2195. A DMI-supplied monitor suitable for Models A or B is \$899; and a monitor suitable for Models B or C is \$1995.

How Does it Look?

How does the high resolution display look? Well, I was frustrated at first, because my Seiko CM-1440 multisync monitor is interlaced and the early development driver software I received was not set up for interlaced displays. Also, my Seiko does not sync on the green signal, and the color balance was wrong, again a function of software, not the card. A call to DMI resolved these questions but unfortunately didn't get me a display on my Seiko before the article deadline. Since the card is fully programmable, it can be made to work with any monitor because sync, resolution, and all other parameters of your monitor's display can be programmed in: This hardware can handle anything! By the time you read this, the software will have caught up and you will not have my problem. The DMI engineers assured me that not only will the production software handle all resolutions, but also interlaced as well as non-interlaced monitors, too. They told me also that they have in the works, on the hardware side, a similar hi-res card using the new Texas Instruments T.I.G.A. TI TMS34020, 24-bit color chip, along with their 34082 math co-processor on board.

Since the card is fully programmable, it can be made to work with any monitor.

We're talking big-time work station display power here, folks, rivaling some very advanced equipment costing in the mega-dollar range! Imagine the 3-D real-time animations in 1280x1024 and 24-bit color! DMI is really putting the Amiga into the vanguard of what personal computers can do. No more second best!

Meanwhile, I switched to a Commodore 1950 monitor, the stock A-3000 monitor, and presto! I saw a good color display—the 1950 syncs on green. But I still could not get a display of an image at any but 640 resolution, which is the standard Amiga high resolution. I checked the specifications and found that the Commodore 1950 goes up only to 800x600 resolution, so it obviously could not display at a 1024 setting. The driver software I used was really only for DMI in-house development and tests, and used a simple CLI-based command with arguments for programming the resolution in discreet

DMI is putting the Amiga into the vanguard of what personal computers can do. No more second best!

jumps (320, 640, 1024, and 1280), file name, and board number. The production software, again, will take full advantage of your monitor's highest resolution. For example, the Commodore 1950 will display at full 800x600 capacity. But for the moment I had to use 640. The file must be in 8-bit IFF format before it will display. You can convert your pictures to 256 colors in *Art Department Professional (ADPro)* easily enough. Maybe DMI will build in a conversion program in their finished software as well. I could not obtain a 1280x1024 monitor, and I couldn't drive my 1024x768 Seiko, so therefore I was using one of the "minimum" resolutions, but the results were nevertheless very tasty due to the extra displayable colors. The Amiga will display only 16 colors by itself in highest resolution; the card added an extra 240 colors to the display. Because of the more numerous colors, shading is such that you cannot see pixels until you get pretty close to the screen. Meanwhile, I had to settle on 640x400 resolution and 256 colors. In the near future, I hope to show you some pictures in 1024x768 resolution once DMI tweaks my driver to work with my Seiko. I will also try out the new paint program DMI is developing for their card, as soon as that's ready—no release date as yet.

The Software

Now we come to software. You need software to "drive" any hardware device, and the DMI Resolver is no exception. I used a version of DMI's developer software to drive the DMI Resolver for tests but I won't discuss that further here, because by the time you read this there will be some commercial drivers to choose from. As with every piece of hardware, it takes a while for the software to catch up. When users find out how cool this card is—and how lightning fast it is—they will be jumping on the DMI bandwagon. This card is a breakthrough. When you consider the cost of a TARGA card and how much these other display gizmos cost on other platforms, you'll really

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Just which companies have made a commitment so far to support the DMI Resolver? The short list at this writing includes such heavyweights as ASDG (*Art Department Professional*); Oxxi, Inc. (*Aegis Draw*); Ditec (*DynaCAD*); Octree (*Caligari*); Natural Graphics (*Scenery Animator*); AdSpec (*Draw 4D Professional*); and Progressive Peripherals (*3D Professional, Video Blender*). The list will undoubtedly grow, as I am writing this at a very early stage of production.

Displays

After I looked at the test image DMI sent along with their card, I remembered with a sinking feeling that most of my paint programs save images in low or medium resolution or too few colors to give any kind of real workout to this card. You cannot create information that isn't there, of course. Just

for fun, though, I loaded a DeluxePaintIII image into the DMI Resolver. It loaded just fine, but took up only one quarter of the screen, because it just didn't have enough pixels to fill out the display. It was a miniature replica, faithful to the original, however. It looked as if I were looking at it from across the room, but the image maintained all the original information on color and pixels. I tried out these images just from curiosity. While I was thus

I can imagine the
kinds of pictures I
could create with a
package like this.

engaged, however, it did occur to me that if you wanted to display four DeluxePaintIII images at once like in a comic strip layout, you could make a background in ADPro and composite these images on the background, and display all four of them at once with the DMI card in 640x400 resolution. Just think of what you could do at full 1280x1024 resolution: a comic strip of four lo-res pictures across and five down on one screen without losing any information! The 256 color palette would insure that you could display eight pictures with completely different palettes and preserve all the colors. I once made a four-part image, four low-res pictures composited in ADPro and saved as a 24-bit file, and now I tried it out by re-loading its 24-bit data file into ADPro and changing the display to 256 colors and saving it as a 256-color image. Thus loaded into the DMI Resolver, the large composite looked very good. I compared it to the same image loaded into ADPro and displayed in a regular high-res Amiga format—16 colors—and the comparison between my side-by-side monitors strongly favored the DMI card. Not only did the resolver display the entire image on screen, but of course 256 colors beat 16 as a Smith & Wesson beats four aces. This technique would be useful for multi-media displays and shows, or maybe in presentations on CD-ROM. I am sure that once the ADPro driver is finished, ADPro and the DMI Resolver will make a great pair: one to process and composite, and one to display. Contrary to what I first thought, I discovered that low-res images, plus ADPro and the DMI Resolver can indeed prove useful. Imagine all the creative things to do, once more software is available! I suddenly thought of the sample image that came with my ADPro package: you know, old Ben Franklin in the Earthshrine in a fractal landscape, so I sent him through the same conversion and compared him head to head, so to speak, with himself, displayed in ADPro with the best stock Amiga display format vs. the DMI display. Ben came out better in

DMI. His skin was more real-looking, and the Earth looked like the photograph it came from instead of like a drawing of the photograph it came from. Again, the improvement came mostly from the increased number of displayable colors, but I did notice a better brightness and contrast coming from the DMI. Next, I tried displaying some DCTV images.

This came about for lack of any other image files to test, and because I couldn't use my high resolution monitor, rather than from any scientific series of experiments. The only other images from my collection I could test color output on were DCTV 24-bit images. They can be converted, downward, in ADPro to a 256-color format but they remain large enough, in pixel dimensions, to fill out the screen when displayed by the card. I was curious as to how 256 colors perceptually compared to 16 million. We would expect, all other things being equal, that 16 million colors would be better than 256, but all other things aren't equal, especially resolution. All resolution is directly related to something called bandwidth. The higher the number representing bandwidth, the higher the resolution. An NTSC signal has a bandwidth of about 6 MHz at best, and a regular VGA monitor has a bandwidth of about 60 MHz, so a monitor looks sharper than a TV screen, as anyone knows who has tried to read an Amiga Workbench in NTSC mode. So my experiment was one of looking at a display with vastly many more colors, but a greatly inferior resolution (DCTV) against a display with many fewer colors but 10 times the bandwidth (the DMI Resolver). I have my NTSC video monitor set up right next to the Commodore 1950 monitor, so I could arrange to see the same image displayed in two different formats. Which looked better? It depends on what you display! I tried pictures created in DCTV on the card; but they looked better on DCTV, even though DCTV is a kludge and the Resolver "does it right." But I also tried a sample image that came along with my

Resolver card, and after I converted it in ADPro into DCTV-readable format, displayed it on DCTV. It looked much better on the card! So the results were inconclusive. Figuratively speaking, I was mixing apples with oranges. But there was something else, too. What did become clearer to me are the complex perceptual relationships between color and resolution—by that I mean the impression you get, as opposed to comparing engineering specifications.

As far as work environment is concerned, there's no contest: the DMI Resolver will make your computer a beautiful place to work with your application software.

What I found out was that sometimes color is so important that having more colors makes a better image in spite of lower resolution, and sometimes higher resolution means more than number of colors. Also the software of origin has a lot to do with the appearance of an image, just as the medium used to make a work of art has much to do with its appearance.

If you want to display the maximum of graphic information accurately, then a high resolution card such as the DMI Resolver is most assuredly the way to go. If fooling the eye into believing it is seeing more than is really there, then something in 24-bit color like DCTV is a good choice. The specifications would suggest that the future DMI card with 24-bit color will give us the best of both resolution and color. In the meantime, there is a valid trade-off between 24-bit color and limited resolution; and maximum resolution limited to 8-bit color, that forces one to make a choice depending on what one

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wishes to display. There are exceptions, of course, but in general, images of natural scenes will benefit most from 24-bit color, whereas hard-edged or precision pictures of man-made objects do better when resolution is maximized. As far as a work environment is concerned, there is no contest at all. The DMI Resolver will make your computer a beautiful place to work with your application software.

Users

Who will use the DMI Resolver? The DMI card will be great for graphics designers and publishers using programs that need higher resolution and more displayable information rather than a myriad of colors. (Remember, the DMI works in 240 colors more than the 16 the Amiga is used to displaying in high-res, so you do get a major improvement in color!) Those making structured drawings, ray traced logos, CAD drawings (especially CAD), DTP, and anything with clean crisp lines, lots of detail, and shadings that don't call for scads of different colors will love the DMI. Get a DMI Resolver for displaying these applications the best way possible. But for rendering images that look like watercolor or transparent oil glazes, or other artist's techniques, or for displaying scenes from nature that are very color dependent and subtle, a

24-bit capability such as DCTV (or the future DMI 24-bit card!) may be a better way to go. There's nothing wrong with having both.

Video

What about video and the DMI Resolver? To do a DMI highest-res to video thing, you must use a scan converter. The only trouble with that is a scan converter costs \$10,000. A lower resolution may be output to video with an encoder which is not expensive, but then your Amiga can output this resolution very well already. I'd suggest you don't consider the Resolver as your first video handy-dandy. That's not really what it's best for. The Resolver's use in video will be limited to high-end specialized work where there is a cost-justifiable reason to take very high resolution to video tape, but these professionals will already have a scan converter or not flinch at having to buy one. Maybe they'll be making ultra high-res 3-D animations for movie special effects, or something of that caliber in their Resolver. Just as the existing high-end engineering work stations do not operate using a natural video environment, neither does the Resolver. Speaking loosely, the Resolver takes an image from a natural video environment (the Amiga) and translates it into a signal much like what one encounters on a Mac or a CAD work station. So if you want to go from here back to video, you'll have the same problems those platforms have, mainly expensive problems, in taking the signal back to video, because you'll need to revamp the signal (scan timing and such) by using a scan converter. Since color is so much more effective in video than resolution, because of NTSC's insurmountably low resolution, other ways to do video graphics usually make more sense than a hi-res card.

New Resolutions?

I'm excited to try the 8-bit paint package soon to be released by DMI. It wasn't ready at this writing. It seems the trend now is for every new card to

come out with its very own paint program! It's almost as if you had to have a different player for each five of your music albums. I am certainly glad to be a multi-media artist. I don't mind using different tools for genuinely different effects, but I like standardization when things are similar. Since a hi-res card displaying 256 colors is thus far unique to the Amiga, I would like to see software support for it, and one more paint program would be welcome for this unique ability to display in high resolution. I can imagine the kinds of pictures I could create with a package like this. They would have a flavor and a feel all their own, in much the same way that each Amiga format and DCTV have their unique appeals. If we are going to have so many standards, however, won't more of you developers make conversions between files and devices easier? Then I could create a picture directly in its "natural medium" and be sure I could take it somewhere else for details or finishing, or maybe just for fun. ADPro is a lifesaver here. A high resolution picture would necessarily appear in another paint program as a magnified close-up of the original, but that would be OK as long as one could scroll the picture.

What about this high resolution and 24-bit color together on the Amiga?



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This will be a reality when DMI comes out with their next card after this one—no release date, yet. Meditate on these, in the meantime: cost, memory and storage! You will be handling gigantic files (and piles of cash) if you go high-res and 24-bit. Particularly as memory and storage capacities increase and their prices decrease, will the time-efficient and cost-effective handling of colossal files be feasible for most of us. Software, compression and decompression hardware chips, virtual (disk-based) memory, and many other things need to be integrated and systematized before we get to graphic nirvana. I am grateful to see DMI, and other innovative companies, take such a strong lead in moving the Amiga out front, really out front. We need more companies to join them, and we need to have software developers and Commodore to support them and each other.

Final Resolution

What's the bottom line? The DMI Resolver is a handsome piece of work and does what they say it will do. You have one problem if you own an A-3000 and want to use your video slot and the Resolver at the same time. Be prepared to get a second monitor, a big, expensive one, if you plan to use the full resolution power of this card. Even

so, the card is priced attractively and though it uses TARGA technology, it costs less than similar cards used on other platforms. The expense of the card plus monitor precludes its use except by professionals with a bigger budget than home users are likely to find justifiable. If you are a professional CAD user, or a graphics designer, or a desktop publisher or

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What does the future hold for the DMI Resolver? If software developers get behind DMI, it will take off in a big way. Its quality of workmanship is first rate. The Lowell card by Commodore (the specs of which, by the way, are not nearly as good as the Resolver's, which are awesome) is aimed solely at UNIX users, and so far, the DMI card is the only one aimed at the AmigaDOS environment, too. Speaking of environments, I come to the last idea: Make the

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DMI transparent to all the Amiga software. What if addressing the card were an accessible part of the system software, rather than leaving it out there on the bus as another device to be driven, fired up or loaded by application software? Let them program the system software! Seriously, is there a third party software genius out there willing to re-write the Amiga Intuition Library? That's what it would take to make the DMI display card work transparently in the system software. I wonder whether or not Commodore would be willing to do this, given their involvement with the Lowell card. Not likely. The system software route is the most elegant solution to the main problem facing this very elegant hardware. Now if someone would just have the intuition to recognize this golden opportunity, it would start a revolution! We could have our cake and see it too!

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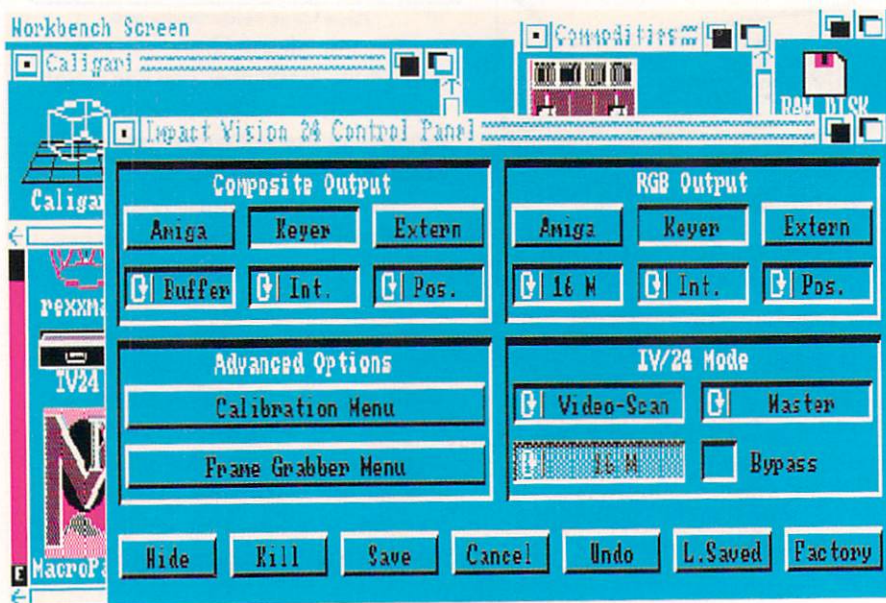
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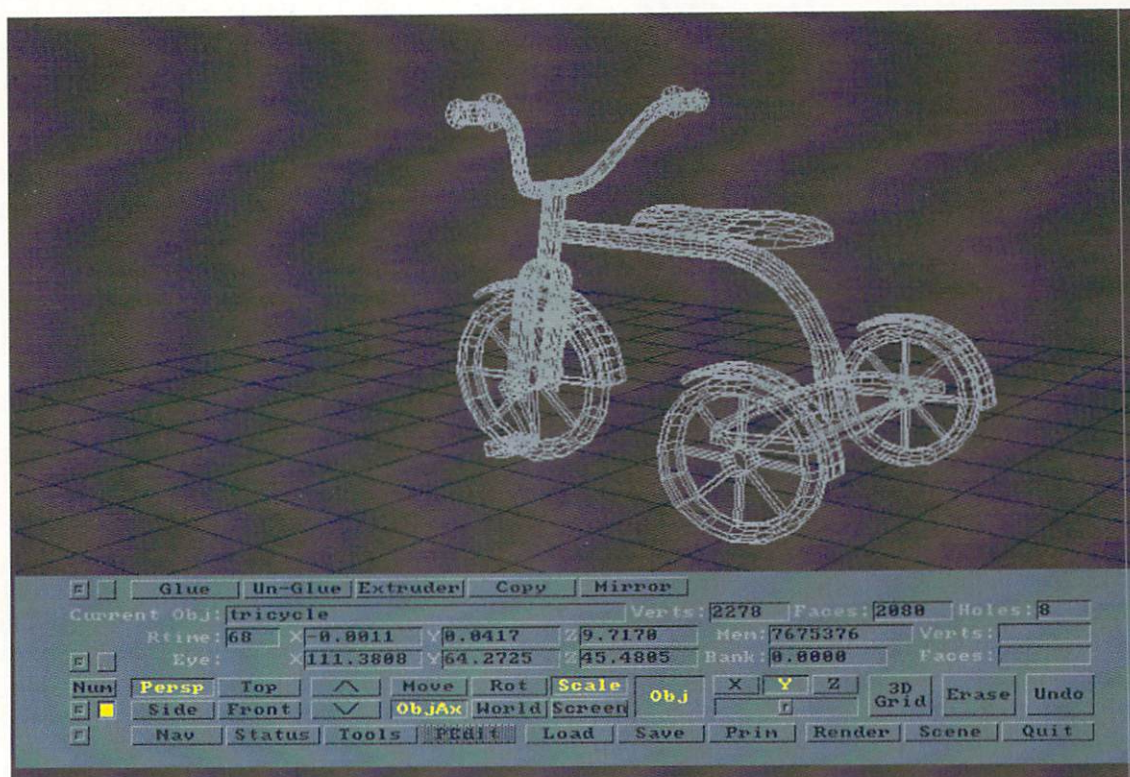
GVP's Complete Video Answer

by Frank McMahon

FINALLY, 24-BIT AND HI-COLOR BOARDS are becoming standard equipment on the Amiga. The latest board to join the pack is the Impact Vision 24 Personal Video Adapter, a 24-bit frame buffer from Great Valley Products. Through extensive testing with a board supplied to me by GVP, I can give you a taste of the next wave of Amiga video peripherals—the caveat being that although the unit is pretty final, the software I have been using is a mixture of final version and beta level. I'll refrain from reviewing the software until version 1.0 is released, centering instead on what the board is capable of and what the package can do.

Impact
Vision 24's
preferences
control
software.





Main interface screen from Impact Vision 24's 3-D modeling engine Caligari.

What Does It Do?

The board is a 24-bit frame buffer. The frame buffer supports full video overscan and is software-switchable between PAL and NTSC modes. The addition of being able to run video into the board, and out, allows for such

green, blue, and sync signals. The quality advantage is as clear as your Amiga "RGB" display, which works on exactly the same principle, for sharp images and none of the distortion caused by combining the color signals, as with composite. The incoming video also

you to overlay images onto an incoming RGB video source while an analog genlock allows overlay onto composite video. The 24-bit frame grabber can freeze video or grab a single frame from an external video source and save it to disk.

Professional Video Adapter for the AMIGA

features as genlocking and framegrabbing. It's important to note that as it stands now the incoming video must be in RGB form; future adapters will allow just about any variation of video source. RGB output is used by high-end broadcast stations and production houses, separating the red,

allows a "Picture in Picture" mode, which features a scalable Workbench-like window of live video on your Amiga screen for re-sizing and grabbing RGB 24-bit frames. Applications include special video effects, remote monitoring and interactive presentations. The digital RGB genlock allows

A TBC is not required for external video sources. I needed only to switch a jumper on the board for Tape input rather than time-base steady camera mode. There is also an option to accept an external keying source for chroma or luminance keying.

Support Software

Modest preference software is included which allows control of the board's scanning rate, digitizer, and genlock mode. There is a basic IFF viewer which can show 24-bit files on the frame buffer. But the main support comes through 24-bit versions of *Macro Paint* and *Caligari*. *Caligari* is an excellent 3-D modeling system which is a scaled-down version of Octree Software's professional packages. It lacks animation options, and has limited object construction tools, but still packs a lot of 3-D power. It is not a ray-tracer but features phong shading for fast results. The program has the option to render directly to the Impact Vision 24-bit frame buffer for hi-res, flicker-free, 24-bit results. It also requires a 68881/68882 floating math coprocessor to boot up. The program requires that the coprocessor be part of the processor bus and not a separate add-on device/card.

Also included is a version of *Macro Paint*. Your drawing interface and controls appear right on the 24-bit framebuffer screen allowing drawing in 16 million colors. It sports numerous features, many keyboard equivalents, and every command has an ARexx counterpart. It's too soon to comment

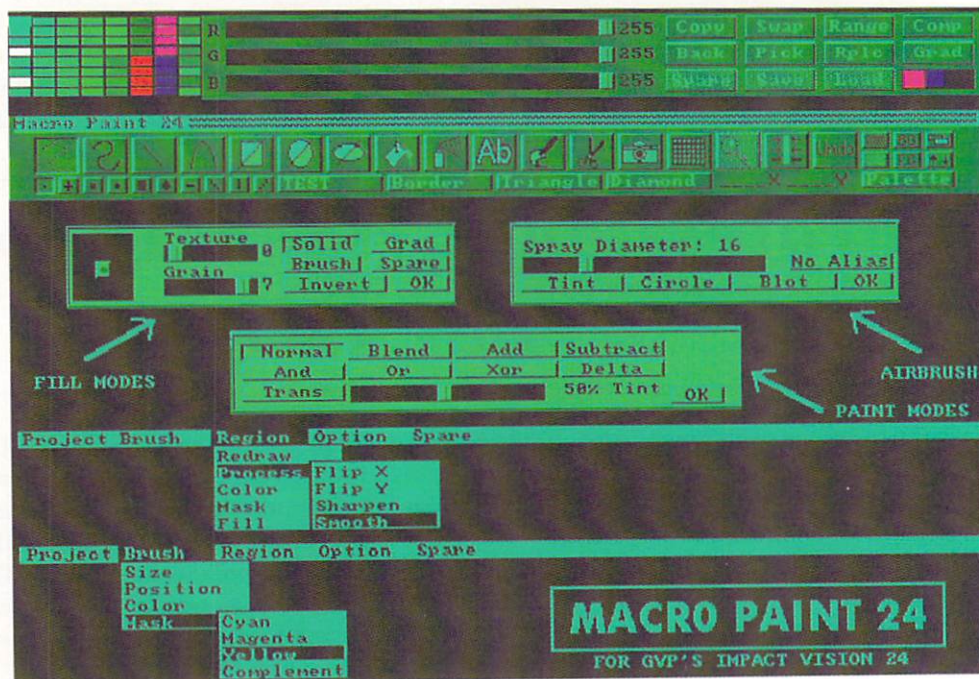
Picture-in-Picture Mode allows live video input to a sizable box on your Amiga screen.

on the paint side of Impact Vision, but it is worth noting that the painting is not *exactly* 100% real-time. When you draw a line, or anything else, for that matter, your line is represented as either red, green, or blue. When you lift up the mouse, completing the operation, the program "chugs" for a second or two, similar to Toaster Paint's "send to buffer," and the true color appears. Its feedback response falls somewhere in the middle of the Firecracker 24's fast true real-time paint and Toaster Paint's slow buffer-rendering non real-time. ["Scala," Impact Vision's included titling and character generator program, was not available in a released version for this preview. —Ed.]

Installation

The board requires an Amiga 2000/2500/3000 with 2MB of memory (5MB is ideal) and uses a zorro slot and the video slot. Since the 3000 has the two slots side by side, the board just presses in. On the 2000 an optional ribbon cable with card runs over to the video slot from the Impact Vision board. Video cards such as the Video Toaster cannot be used on the same Amiga with Impact Vision since there is only one video slot. External genlocks tend to create timing problems and cannot be used as well; however, external encoders will work. The back of the board contains an RGB (VGA) 15-pin monitor out and a 26-pin input/output connector. The board contains no BNC or Y/C video outputs; however the 26-pin connector connects to an external box that can have composite input and output, an Amiga analog pass-through, and other modes. It is unclear whether or not this box will be included with the final board. The box was not supplied with this unit since it is still in production, but an adapter cable was substituted for testing purposes. GVP plans a series of expansion units that will hook to the back of the board, allowing RGB color splitting and composite keying among other uses. While this set-up

Composite screen highlighting some of the numerous commands available in the included paint system Macro Paint 24.



does allow for unlimited future expansion, it does mean that the actual Impact Vision unit does not "do it all" without extra hardware.

Out of the box, the board provides a composite adapter and 15/31 kHz analog RGB outputs. A standard VGA or multi-sync monitor plugs right into the board; most Amiga monitors will require an optional adapter cable. In order to take advantage of Impact Vision's high-scan/multi-sync flicker-free modes, a compatible monitor is needed, Commodore's 1950, for example. The back of the board contains a three-position toggle switch which can also be controlled via software. The positions include: Genlock mode (external sync pulse), Master mode (standard mode - internal sync), and bypass.

Conclusions

The potential uses for Impact 24's "Picture-in-Picture" are limited only by your imagination. The flicker-free 24-bit output is exceptional. The software to be bundled with this board will provide for a well-rounded library of easy-to-use, powerful programs for creating presentation packages, animations, whatever! The ability to use the board in the 2000, 2500 and 3000 allows for a broader base of users, availability of more power, and gives 3000 owners access to a powerful video board.

[At press time, GVP informed Amazing Computing of changes and enhancements to the Impact Vision 24 board. There will be two separate versions of the product, one for PAL and one for NTSC. Each unit will have different components and will be factory calibrated for either PAL or NTSC. GVP has decided to "bundle" with the product a Composite/S-VHS video to RGB converter box. Also, the jumper referred to for switching from Tape input to TBC input is no longer operational. There is now only one setting for all input. We will bring you a complete review of the product after the final version is made available.—Ed.]

•AC•

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WHY

Should You Use the CLI?

BY KEITH CAMERON

To click, or not to click—that is the question. One of the benefits of being an Amiga owner is having this choice. With some computers, you are forced to either click away with the mouse or learn some version of DOS. Most users new to the Amiga, especially those with limited computer experience, welcome those colorful icons and the two-button mouse. With such an intuitive design, it is, in fact, quite tempting to spend the rest of your Amiga-life clicking away. However, beneath the icon surface is another Amiga world, called the CLI, and a working knowledge of it certainly has its advantages. If you've never given any serious consideration to this aspect of the Amiga, you're missing out on the full power of your computer.

First of all, CLI means "Command Line Interface." Basically, it is a way of communicating directly with the Amiga using a specialized language called AmigaDOS. In essence, you use the CLI to type in specific AmigaDOS commands rather than pulling those commands down from a menu bar. For example, if you wanted to copy a file from one disk to another, you would use the COPY command. To delete a program or file, you would use the DELETE command. The vast majority of such commands as these reside in the 'c' directory on your Workbench disk. Even if you wanted to run a program which had an icon, you could do so from the CLI simply by typing the name of that program. Thus, anything done from the Workbench can also be done from the CLI. The reverse is not true, though, for there are many programs on your disk that cannot be run from the Workbench.

One great advantage in using the CLI, especially for A500 owners, is that it uses less memory than the Workbench. Since the CLI allows the user to communicate directly with the computer by using DOS commands, icons are not necessary. This considerably saves memory because each icon uses a set amount of memory. For example, a standard drawer icon uses 894 bytes while a standard trashcan icon uses 1166

bytes. For machines with large amounts of RAM, these amounts are negligible, but with only 512K RAM, every byte counts. Watch the memory count in the menu bar and notice how much memory is used to simply open up icon-filled windows.

Another reason to consider using the CLI is to gain access to more software. There are many excellent public domain and shareware programs on the market today at very low prices. However, many of these programs require a working knowledge of AmigaDOS; in fact, some can be run from only the CLI. On a few occasions I have purchased public domain disks which do not contain a single icon. Accessing such disks requires at least some knowledge of AmigaDOS. By ignoring the CLI, you are neglecting a valuable source of worthwhile programs.

Likewise, it is through the CLI that many utilities can be added to improve the overall operation of your Amiga. Such programs can speed up load time, add commands, and speed up your mouse movement. For example, if you want to install a program which will blank your screen after a given period of inactivity, you would probably need to do so using AmigaDOS. Likewise, if you wish to have a virus checker

3 reasons why:

- *communicate directly with the Amiga via commands*
- *uses less memory than the Workbench*
- *gain access to more public domain software*

automatically load and constantly run in the background, scanning each disk you insert in a drive, then you need to be familiar with AmigaDOS.

A working knowledge of the CLI also makes it possible to personalize various disks. For example, I have taken my favorite quick word processing program and have reconfigured the startup-sequence so the program loads upon booting instead of the Workbench screen. Not only does this save time and effort, it also saves a little memory by not forcing me to open up the disk and expose those byte-hungry icons.

Furthermore, some familiarity with the CLI is essential in order to upload and download files on computer bulletin boards, thus opening up another source for free software. Since most files on bulletin boards are compressed using ZOO, ARC, or other similar programs, one must know how to use the CLI in order to compress and de-compress these

ample, numerous fonts, clipboard devices, printer devices, and other files that can be fully manipulated only by using AmigaDOS. Sure, you can go to Preferences and select the printer you wish to use, or you can use Notepad to access the fonts. But what if you want to add a printer to the list available, or you want to add another font or two?

You are also missing out on some real power by not using AmigaDOS commands. The RUN command, for example, allows for true multitasking. Some programs loaded from the Workbench are not capable of multitasking, but they are when loaded using the RUN command. Additionally, commands like INFO and LIST provide you with useful information. INFO tells you exactly how full your disk is—useful if you are moving things—while LIST tells you the exact size of various files—also useful when moving things. Have you ever had a damaged disk with certain programs that wouldn't load? A pure Workbench user might be tempted to simply discard the disk and write it off as a loss. However, by using DISKDOCTOR in AmigaDOS, you probably would be able to save the disk and much, if not all, of its contents. It certainly has come to my rescue many times.

The CLI basically allows you to begin using your Amiga fully. It is through the CLI that much of the maintenance of your computer is done. If you've avoided it so far because it seems confusing, read through the pertinent section in your manual again and begin using the basic commands. Before long, you'll probably wonder how you ever got along by just clicking that mouse.

•AC•

You are missing out on some real power by not using AmigaDOS commands.

files. Once again, these programs must be installed via the CLI, and most must be operated from the CLI as well.

As I mentioned earlier, I suppose it is possible for someone to use an Amiga and yet never access the CLI. Doing so, however, ignores the full power of the Amiga. Likewise, there is so much available beneath the surface that is useful. Take your Workbench disk, for example. If you click open the various icons, you will see many drawers ("directories" in AmigaDOS language) and tools ("files" in AmigaDOS). However, you cannot see everything that is on your Workbench disk simply by using Workbench. There are, for ex-

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Cleanup Time

by Rob Hays

Keeping Your Amiga in Top Working Condition

Unless you use your Amiga in a sterile environment, one of the problems you must eventually face is the accumulation of foreign matter interfering with the operations. And if you share your living area with furry, four-legged animals as I do, this process will be accelerated. The only routine maintenance needed is very simple to perform. This article will take you step-by-step through all of the procedures that are needed to keep your Amiga in top-notch condition. With a little care and effort, you may never need to visit a repair shop.

The simplest and probably most obvious place to start is the monitor. If you think that the screen seems to attract dust, you're right. The static electricity generated by the monitor actually does attract dust particles like a magnet, which makes the screen the piece of equipment that needs the most frequent cleaning. With the power off, moisten a cloth with a glass cleaner such as Windex. Gently wipe the monitor screen from edge to edge, being sure to get the corners. Turn the cloth and repeat, making sure the screen is thoroughly dry. Now look at the cloth. See how much gunk you were looking through?

Besides the monitor screen, the only other routine cleaning and maintenance needed is cleaning the disk drive(s). For this you will have to buy a head cleaning kit, available at any computer store and most discount stores. These are quite inexpensive, usually around \$10. Make sure the one you buy is marked non-abrasive. Cleaning the drives is very simple, and should be done every couple of months or so for the average user.

Just place a few drops of cleaning fluid onto the surface of the special cleaning disk, and pop the disk into the drive. The Amiga will spin a disk for only about three seconds when it is inserted into the drive, which isn't enough time to do a good job. You really should have the disk spinning for about

twenty or thirty seconds to clean the read/write heads thoroughly. The easy solution to this dilemma is to remove and re-insert the disk six or eight times in succession. A much better solution is to obtain a program similar to Klean from your local user group or computer bulletin board. Klean is also available on Fred Fish disk #297. Used as a command

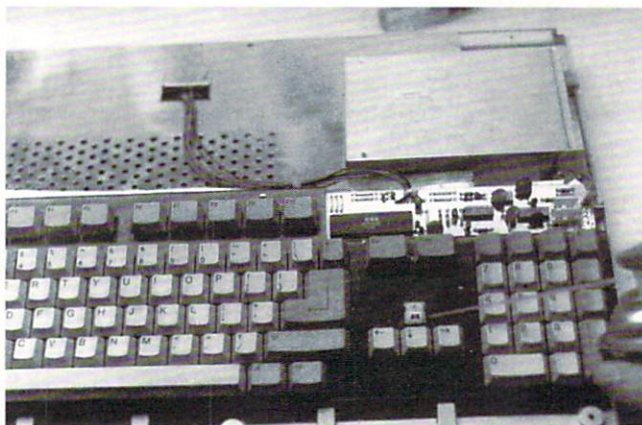
from the CLI, these programs allow you to spin a disk for as long as you want.

Over time, problems can develop as lint, dirt, and hair accumulate. The most frequent problem is with the mouse rollers. These are the small wheels inside the mouse that translate the rolling action of the ball into vertical and horizontal signals the computer can use. Have you noticed that the pointer on the screen doesn't move as smoothly as it once did?

Perhaps it sometimes acts as if it is stuck. Turn your mouse over and twist the retaining plate with your fingers so that the arrow turns from the "C" to the "O." Turn back upright and let the ball and plate drop into your hand. Now look inside the mouse.

All you'll need for this job is a cotton swab, some isopropyl alcohol, and a pair of tweezers. Using the tweezers, pull any accumulation of lint or threads away from the roller axles. Next, dip the swab in the alcohol and gently wipe back and forth along the length of the roller. As this section comes clean, push the roller around to the next section, continuing the process until the entire surface is clean. While you have the mouse ball out, wipe it off with a damp towel and dry it thoroughly. The next time you use your Amiga, I bet you'll notice a big difference in response.

The above procedures will solve or prevent most of the common problems that crop up from time to time. However, if you find yourself repeatedly pressing certain keys before they register, then read on.



The standard Amiga keyboard has 94 keys, and each key has several components. The part you see and actually press is the keycap. This is fitted to a white plastic frame that covers a small coiled spring. As you press against the keycap, the white plastic frame moves down, compressing the spring. A piece of the frame separates two electrical contacts. As the frame moves down, the contacts touch and a keypress is registered by the computer.

The keycaps are held onto the frames with friction, so to remove them, carefully lift straight up. Depending on the location of the key, you can probably use your finger nails or a couple of small screwdrivers. Remember you are working with plastic parts. They won't take a lot of stress before breaking. Don't try to remove the space bar. It's held on differently, and can be nearly impossible to put back together.

If enough lint and fuzz build up around the white frame, it won't compress enough to allow the contacts to close. If you have only one or two keys with this problem, you can pop off the keycap for the afflicted key. Using your tweezers, carefully remove the blockage. After removing the blockage, make sure the keycap is facing the right direction, and press it back onto the frame. When you hear it click, it's seated properly.

If you remove the keycap and the white plastic frame comes off with it, don't panic. First, be sure the coil spring is still in place. Next, separate the frame from the keycap. Make sure the frame is oriented properly, so that the bar of plastic will separate the contacts when it's replaced. Carefully spread the contacts and gently press down on the frame until it clicks into place.

If you have several keys that are causing problems, you'll have to remove the plastic case from your Amiga to gain access to the keyboard. You will need to buy a #10 Torx screwdriver. Most automotive and hardware stores carry these for about three or four dollars. The instructions given are for the Amiga 500, but the procedures should be similar for other models.

Remember: the following procedure will void any remaining warranty on your Amiga. Neither P.i.M. Publications, Inc. nor the author can be held responsible for any damages incurred by anyone attempting this procedure.

First, with the power off, disconnect everything from the back of your computer and the expansion port. Turn your Amiga face down on a suitable surface, and using the Torx

screwdriver, remove the five Torx screws, three on the front edge of the case and two in the rear. Don't remove any other screws.

Holding the case together with your hands, turn the computer right side up. The top of the case will now lift off. The keyboard unit is connected with a braided metal strap and a ribbon cable to the motherboard. These are long enough to allow some freedom of movement. If you find that you need to disconnect them, be sure to mark the keyboard connector so that you won't reverse the connection when re-assembling.

A handy item at this point is a can of compressed gas to blow away the lint under the keys. These are available at most electronic supply shops and photo shops under various names. Please do everyone a favor and make sure that the can you buy contains no chlorofluorocarbons (CFCs), which destroy the ozone layer.

Following the directions on the can, direct the stream of

gas under the keycaps. This should be done from a couple of different angles to ensure removal of all the lint.

Reverse the disassembly procedures to put everything back together, and reconnect all of the cables. Power up your system and check that everything functions properly. If you still have problems with a particular key, you may need to use a small amount of a contact cleaning solution on the electrical contacts themselves.

To prevent a rapid return of the problem, some preventive steps should be taken. The easiest thing to do is vacuum the top of the computer case occasionally to remove the dirt, lint, and hair before they can accumulate. Covering up the computer when it's not in use will help also. Several types of covers are available for purchase, although a simple piece of cloth or plastic will do.

With these simple steps and a small investment of time and money, you can keep your Amiga operating at peak efficiency.

•AC•



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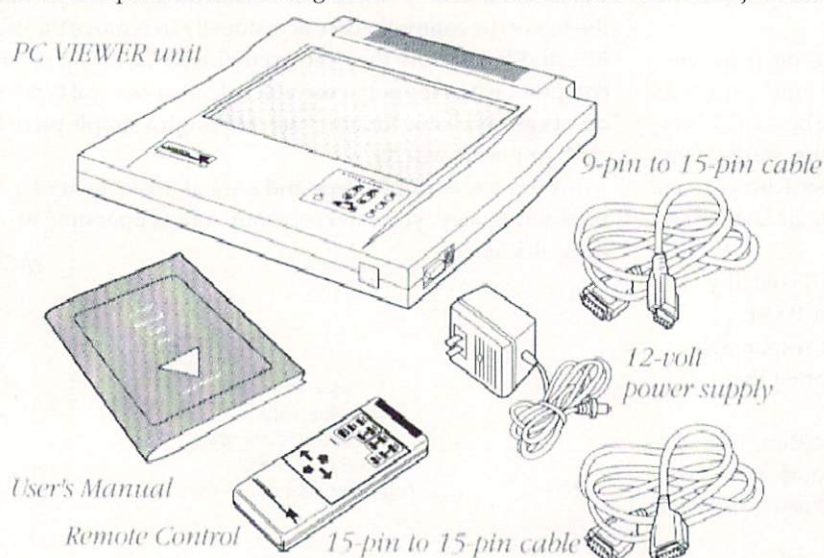
In Focus Systems, Inc. PC Viewer, Model 5000CX

By Merrill Callaway

I'VE NOTICED THAT MOST of my Amiga friends stay out of shops that cater to the PC and Mac crowd. I suppose they're annoyed at the lack of recognition our favorite machine suffers at the mercy of the herd mentality. Even so, I think we often do well to keep abreast of developments in the PC world, because every once in a while some peripheral comes along that is truly worthwhile for the Amiga environment, and your local Amiga dealer may not be aware of it.

The *PC Viewer* by In Focus Systems is such a peripheral. The idea is simple: a very small and light, color liquid crystal display module, plugging into any standard DB-9 or DB-15 monitor output, replaces the monitor. The *PC Viewer*, placed on an ordinary overhead projector, projects your real-time monitor output on to a standard screen or a white wall. An audience can now view the computer screen in living color.

In Focus Systems' logic is brilliant—almost every office that needs this type of presentation already has an overhead projector and a screen. So the *PC Viewer* and a small computer, such as the A3000, make a lightweight, travel-worthy, presentation package. There is, of course, absolutely no software dependence, so any Amiga 500, 2000, or 3000 with a flicker fixer or a flicker-free video device will work just fine.



All you need on any computer is a DB-9 or DB-15 output connection. The only bad news is that you cannot use this device with an RGB port. I may as well tell the other bad news here as there is only good news later on. The list price is \$4995. LCD technology this good doesn't come cheap. In Focus Systems calls their patented technology Triple Super Twist Nematic or TSTN. The palette range of the model 5000CX which I tested is 4913 colors, according to the IFS brochure. They also claim that the 5000CX produces saturated colors, depth, clarity, and subtle gradation of tone. They're not kidding. I agree with their claims. While the output was not quite as tasty as that of my Seiko CM-1440's Trinitron tube, it was truly impressive. I tested it with an interlaced screen of text in Workbench 2.0 standard colors of blue, black, and gray. The text was sharp and clear. A room full of people would have no trouble reading text from a distance. In case you are unfamiliar with LCDs, they are the same low power consumption, imaging devices used in digital watches. However, *PC Viewer*'s are in color, and much more sophisticated. Look at the display of a digital watch. Observe how the numbers change. It's quick enough, but slow compared to the scanning speed of a computer screen. The *PC Viewer* suffers the same drawback—it's slow. If you move the mouse pointer across the screen in any but the most leisurely pace, it will "ghost" as its images catch up. Just for fun, I tried "Half-Brite Hill," an animation included with DeluxePaint III. The already ghostly images were even more ethereal. Actually, the look wasn't too bad. As long as the animation stops somewhere for a half second or so, the image will clear up. Actually, for blurred motion, the *PC Viewer* contributes some interesting effects. While working in the windows and clicking and moving the mouse, I began to feel downright leisurely. The catch-up images make everything seem to go in slow motion. The *PC Viewer* excels at doing slide shows, however, because catch-up is not a problem. It is also OK for slower type animations such as animated business charts.

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So far, we've found that the PC Viewer is sharp, clear, and lightweight at 6.7 pounds. It's rather slow, expensive, and incompatible with an RGB port. How about the color? It's not only saturated, but fairly accurate, too. There is even a button for reversing the palette. Speaking of controls, the PC Viewer has a remote control device about the size of a TV controller. It also has corresponding buttons on the box itself. There are three rocker switches that have arrows on the ends for adjusting in one direction or the other. There are three other control buttons, and a [shift] button that makes the six other keys perform additional functions, for a total of twelve controls. In unshifted mode, the three rocker keys adjust the positions of the image up and down; side to side; and contrast up/down. The unshifted buttons serve to clear the

choose an 8-color, 64-color, or 4913-color display, the fewer-color choices being useful to increase saturation and brightness of text on a background or for charts with only a few colors; and sync-, which does what sync+ does, only backwards.

The kit comes in a beautiful, fitted-foam carrying case and includes the PC Viewer; two cables, a DB-15 to DB-15, and a DB-9 to DB-15; a remote control; a 12-volt power supply; and a very well-written and illustrated spiral-bound manual, printed on expensive coated stock. The overall look and feel is very professional. I had no trouble setting up the PC Viewer or operating any of its features.

IFS also markets a compact overhead projector that I used to test the equipment, and it is a paragon of ingenious design. It is rugged, small, com-

particularly if it offers computing or has multi-media presentations on a computer. Anyone in business who makes frequent presentations outside of the office is an obvious candidate. It occurred to me that large Amiga-user groups in metropolitan areas could afford to purchase one for meetings and demos of software. Amiga dealers could use it for their training sessions on the Amiga for customers or staff. If you train people with AmigaVision or other software, the PC Viewer is a natural, as long as you consider my caveats about animation and the speed of the LCD display.

I probably wouldn't buy a LiteShowII unless I needed to travel by air regularly, and size and weight were paramount. Even then, I'd consider an Amiga 500 decked out with an ICD Flicker Free Video and their new inter-

The PC Viewer, placed on an ordinary overhead projector, projects your real-time monitor output on to a standard screen or a white wall.

screen of unwanted patterns that sometimes occur, though I never saw any; reverse the palette to put light letters on dark or dark letters on light backgrounds; and sync+ to cycle forward through sixteen synchronization modes in order to automatically lock on to various graphic output signals. Shifted, the three rocker keys become mode, which steps through some non-standard graphics modes used in the PC environment: Hercules Compressed, Hercules Truncated, AT&T 6300 series, Mitsubishi Maxi Compressed, a space for future use, and the standard PC Viewer mode for VGA; tracking, which fine tunes the PC Viewer's internal clock in 64 steps to match your graphics output; and level, which adjusts the color mapping in 64 steps to a broader or a narrower range of tone for a given color. The remaining control buttons, when shifted, become reset, a return to all factory default settings; palette, which allows you to

compact, and light. With both these products by In Focus Systems, not only will the attention to detail project your computer output, but also the equipment itself will project your image as a winner. Another interesting accessory from IFS is a product called LiteShowII, a 3.7 pound system so small you can carry it in the space of half a briefcase. It records images and files from your computer on its own 3.5" 1.44 Mb (HD floppy) drive. Like the PC Viewer, it takes the monitor output, so there is no software compatibility question at all. After you record, the device has a hard-wired hyper-media capability with which to do programmed or real-time sequencing and 13 types of dissolves. It lists for \$1995.

Who should buy a PC Viewer? The price will decide for you in most cases. Most of us would expect there to be a pressing need before we could justify the expense. A school or university could well justify the purchase, par-

nal hard drive. This system, with *AmigaVision*, *Elan Performer*, or other media control software, would have a hundred times the power of the LiteShowII at about half the cost, with only a little more bulk and weight. An A500 without a monitor to lug along is a small and compact bundle in its own right. All in all, I recommend the PC Viewer to anyone who can justify its cost by the need. The overall quality is superb, both in the workmanship and in performance.

•AC•

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ROOMERS

by The Bandito

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Commodore Doesn't Tell Viewers

The Bandito keeps hearing all sorts of fun things about other companies developing CDTV-like machines. Apparently, Apple's CDTV clone has been revived and killed more times than a comic book villain. The latest word is that it's heading for a Christmas 1992 debut. In between, Apple is courting entertainment software developers, including some CDTV developers, hoping to get some CD-ROM-type product ready. As if that isn't enough competition, an Intel chip-based CDTV look-alike is being readied by not one but three different big electronics firms, again hoping for a

late 1992 release. And of course, CD-I should be rolling by the end of this year. So the CD-ROM competition is becoming red-hot for 1992. Oh, yeah, don't forget there's a bunch of videogames with CD-ROMs coming our way, too.

But CDTV is fighting back strongly. The Bandito hears that Commodore has signed a deal to put analog display circuitry in every CDTV. This gives you the capabilities of DCTV output, that is, millions of colors for TV-quality pictures. Of course, you won't be able to digitize pictures, but you can always buy something else to do that. The most amazing part of the deal is that Commodore won't increase the price of CDTV at all. In fact, the price will probably drop by a couple of hundred dollars after Christmas. Increased manufacturing efficiency is part of the reason, but the demands of the marketplace are an even more compelling justification. CDTV isn't selling as fast as they'd hoped; the Bandito hears mixed reports about CDTV sales so far. Commodore is hoping for big things to happen during the Christmas season, but we'll just have to wait and see.

Commodore is trying to help CDTV sales along. For one thing, a big advertising campaign is planned for Christmas. For the long term, the Bandito hears that Commodore is considering funding the development of CDTV titles by outside developers. (Commodore is already producing a football game for CDTV, with some very nice audio.) Apparently, they want to ensure that there are some good CDTV titles available in key product areas, without having to wait on third-party developers. This situation may change in the future if more CDTV titles get produced. However, since CDTV titles aren't selling in vast numbers yet, developers aren't exactly rushing to create new CDTV software. Slow and cautious is their watchphrase. Most of the initial rush of titles came from already existing CD-ROM or computer software that companies ported to CDTV in case they could make a killing by being the first title out for a new hardware platform. Now, as CDTV works to build up a sizable market, we'll see the pace of new software releases slow somewhat.

In the eyes of some developers, it's CDTV's turn to prove itself. It's

up to Commodore to get out there and sell a bunch of CDTV units in 1992. The Bandito's advice? Get the price point down to under \$500 on the street as fast as you possibly can, certainly by Christmas 1992. Do some innovative promotions, advertising, and marketing to make people aware of CDTV and what it can do. Invest in some key CDTV software that offers a compelling reason to buy the hardware. Donate some CDTV units to schools, hospitals, and the like; it'll be great publicity and more people will get to use the hardware. You've got to spend heavily now to get this hardware rolling before the competition comes on strong.

And there's much competition coming in 1992. Some very heavy hitters are planning CD-ROM type stuff: Sony, Nintendo, Philips. These guys can spend billions on production and marketing. Commodore's big advantage is being out there first and having a large initial software

hardware? "You shoulda bought a 2000" isn't a good answer. So California Access developed the Bodega Bay expansion box. Now another company has come up with their own version of A500 expansion. Inovatronics has announced an expansion chassis for the A500 is in the works. The Bandito thinks that this is a Good Thing; we need ways to give A500 owners more power. Ideally, you should be able to bring an A500 up to the power and capability of an A3000. This means that third-party developers should make an effort to work with the A500. Are you listening, NewTek? How about an A500 version of the Toaster? You know, Commodore should really be the ones to produce an expansion chassis for the A500. Or perhaps a new version of the A500 that's a bit easier to expand. Heck, you really ought to re-engineer the thing anyway just to reduce the manufacturing costs. Shrink the

ture from their standard low-cost strategy, this product should do well among those who need every last ounce of horsepower for 3-D rendering and animation. The 40/4 Magnum puts out 20 MIPS or 3.75 MFlops, which makes it a darn sight faster than 33 MHz 80486 chip. The 40/4 Magnum comes with two serial ports and a parallel port, a super fast SCSI controller, 1MB of static RAM, and 4MB of DRAM. Of course, you can drop more RAM into as needed. Of course, CSA isn't the only manufacturer with a 68040 board. GVP has one, and so do others including Progressive Peripherals and Supra Corporation. It's taken longer than expected because Motorola has been slower than expected in getting the 68040 chips out the door. Next up: a 33MHz version of the '040. Next year we'll see a 50 MHz version, too. And then there's the 68050...

There's only one catch: not all Amiga software is compatible with the 68040 chip. You can expect that software that can really use the extra power, like 3-D packages, will be among the first to revise their programs to work with the 68040. But you'll need to make sure that your software works before you leap into the next generation of CPU's.

LIGHTWAVE 3D AND THE VIDEO TOASTER ARE BEING USED TO GENERATE SOME GRAPHICS FOR *STAR TREK VI*

base. But that advantage won't mean much by 1993. So 1992 is really the make-or-break year for CDTV. If it's not firmly established and selling strongly in the 1992 Christmas season, the Bandito predicts that it's a lost cause. Oh, CDTV might well meander on for a few more years, but it won't be a sizable part of the market if it hasn't already grabbed a chunk of the market by the end of 1992.

New Hardware

The A500's weakness has been the relative difficulty of expansion. Sure, you can add a hard drive and more RAM without too much problem, but what about other

number of chips, get rid of the awkward daughterboard, and put 1MB RAM on the motherboard. Make a new case that's more totable, ideally with a detachable keyboard. If you make the keyboard a separate item, perhaps the rest of the A500 would be a very small box that would be quite portable—maybe even one where you could attach an LCD screen for true portability.

CSA, known as makers of low cost accelerators for the Amiga, have announced their 40/4 Magnum 68040 accelerator board for the A2000. As expected, the 68040 makes for a blazingly fast Amiga, but there's a hefty price tag to be on the cutting edge: \$3995. Although it's a depar-

The Ubiquitous Amiga

The Amiga is in so many places these days that it's hardly worth mentioning it, but the Bandito just can't pass up this one. The Bandito has heard (would you believe through inherent Betazoid powers?) that LightWave 3D and the Video Toaster are being used to generate some graphics for *Star Trek VI*; look closely at some of the pictures you see on *Enterprise* computer screens when the movie comes out. We may even see LightWave graphics show up in the television series, too. "Amiga: The Next Generation" wouldn't be a bad slogan, now would it?

The newest version of LightWave (2.0) may even be out by the time you read this. The new version has ray tracing and higher resolution mode options, along with some new anti-aliasing features. The rest of the Toaster software is also getting new features, but for a whole new interface, you'll have to wait for Video Toaster software, version 3.0. And when might that be? Not soon.

While we're talking about strange places for the Amiga to be found, how about at the MacWorld show—the prime Macintosh exposition? You have to feel sorry for Mac owners; they so desperately want to use their machines for video, and it just isn't cut out for it. Here's an example of state-of-the-art in Macintosh video products: an \$800 video titling software package that can't even scroll text. Of course, the Video Toaster was the big Amiga attraction at the show. NewTek showed over 70 new Toaster digital effects as part of the new version of the software. [See *New Products & Other Neat Stuff*, October 1991.—Ed]

An unusual twist is that NewTek is working on integrating the Toaster with the Macintosh. The Toaster control panel was displayed on the

Mac desktop, at full-size or half size, and all Toaster controls were handled from a Mac. So NewTek is creating a Toaster interface for the Macintosh and the IBM which will control an Amiga-based Toaster. Seems appropriate to the Bandito; you always use lower-powered computers to handle I/O, right?

SIGGRAPH News

Though Commodore didn't show up, there was some Amiga news. NewTek announced the Video Toaster Workstation, which is an A2000 with a Toaster, 50 MHz GVP board, 9MB of RAM, 105 MB hard

Fast Guide to Amiga CLI

Imagine the perfect guide to AmigaDOS. It would cover both 1.3 and 2.0. It would describe every option of every command, and show examples of commands you need to use everyday. It would describe how to use scripts, shell commands, and wildcards. Like the *Fast Guide to Amiga CLI*, it would be designed for speed, be slim, concisely written, and easy to travel with. 12 pages, 8.5" x 11", \$8.95.

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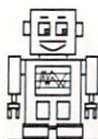
drive, for \$8995. Basically, another version of the bundled Toaster/Amiga with the Amiga name filed off. This annoys some Amiga fans, who say NewTek isn't doing enough to promote the computer. Well, the Bandito feels that promoting the computer is really Commodore's job. You can't expect a company the size of NewTek, which is itty-bitty compared to Commodore, to do Commodore's marketing job. Well, you can, but that's really a sad reflection on Commodore's marketing ability, or lack thereof.

Anyway, before the Bandito

entirely loses track of the news at hand, here's another tidbit. NewTek also announced the formation of Nutopia, a joint venture between Todd Rundgren and NewTek. Nutopia will be using the Toaster and the talents of Allen Hastings and others to create animations for other companies. We'll be seeing some very cool things from them in the future. Already in the works is Todd's next video, which promises to make the first one, "Change Myself," all done with the Toaster, look like child's play.

Digital Micronics Inc. (619-431-830) showed a 1280 x 1024 8 bit graphics coprocessor card for the Amiga called the DMI Resolver. It's based on a 60 MHz TMS34010 processor and can play animations at 60 frames per second. Sounds like fun, but you'd better have a lot of RAM handy. Hey Commodore, check it out. Could be like something you should build into future Amigas. [See p. 40 in this issue for a review of the DMI Resolver. —Ed.]

While most of the computer business is flat, Commodore has had a bang-up year. Commodore International increased net income about 30 times over what it was for last year. Commodore earned net income of



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\$48.2 million in fiscal 1991, up from \$1.5 million last year. Commodore's sales rose 18% from \$887.3 million to \$1,047.2 million.

Irving Gould attributed the results to the company's strength in Europe, which accounted for more than 85 percent of Commodore's total sales. Commodore said sales of the IBM-compatible line of PCs rose 35 percent, sales of the venerable Commodore 64 increased 30 percent and those of the Amiga line grew by 20 percent. Still, income is running rather low at 5 percent of total sales, compared to 8-10 percent for really successful hardware companies. Of course, software is a whole 'nother business; Microsoft—at \$1.8 billion in sales—runs about a 26 percent income on sales, which is truly astounding.

Astute observers will note that C64 sales grew more than Amiga sales, which is really rather frightening. And you can bet that most, if not all, of the Amiga sales increase came from Europe rather than the U.S. Amiga dealers here have not been overwhelmed with massive Amiga sales. So it looks like Dionne has his work cut out for him this Christmas. Can he jumpstart Amiga sales? Will CDTV show some strength over

Christmas? What about the A2000 and A3000 lines? The Bandito hears that the A3000 is in short supply because of the success of the PowerUp program, offering C64 owners a big discount when they buy an A3000.

The Amiga Talks Back

The Amiga has had a not-so-great BASIC with Microsoft BASIC, but there's new hope for this venerable language. True BASIC Inc. (1-800-872-2742) is developing a version of their True BASIC software for the Amiga. It promises full support for

dore Service Center. The Release 2 Enhancer Kits became available in October, but no price had been set.

Following shipment of the Release 2 Enhancer Kits, Commodore will gradually phase Release 2 into new unit production. The Bandito hears there's more to the story than meets the press release. Commodore is getting more adept at reading the tea leaves, from what the Bandito hears. A rumor was floating around cyberspace that the Big C would not put 2.0 ROMs into A500's at all — they'd just keep turning them out with 1.3 in ROM. Well, this idea did not go over very well with Amiga fans who heard about it, and they made their opinions known loud and clear. This was instrumental in getting the plan killed, according to the Bandito's sources.

Well, 2.0 has been only about a year overdue. Commodore is obeying the old marketing adage "If you can't fix it, feature it" by saying that this is the most extensively tested operating system version ever for the Amiga, and it's the most stable we've seen on our favorite machine. Sure hope so after all this time. Now when did you say Version 3.0 would be done? •AC•

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the Amiga's powerful graphics and sound capabilities—coming soon to a software store near you, as the saying goes. Maybe they'll win a few converts from C programming.

AmigaDOS II: Just When You Thought It Was Safe To Use Your Computer

Commodore recently announced completion of AmigaDOS 2.0. A3000 owners should get a five-disk upgrade kit. A500/A2000 owners will get a Release 2 Enhancer Kit, with new ROM, disks, and full documentation. You'll have to have the ROM installed by an authorized Commo-

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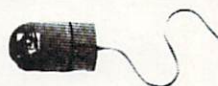
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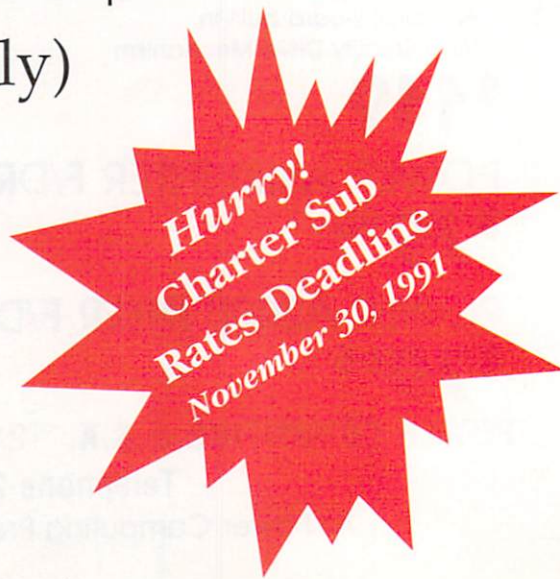
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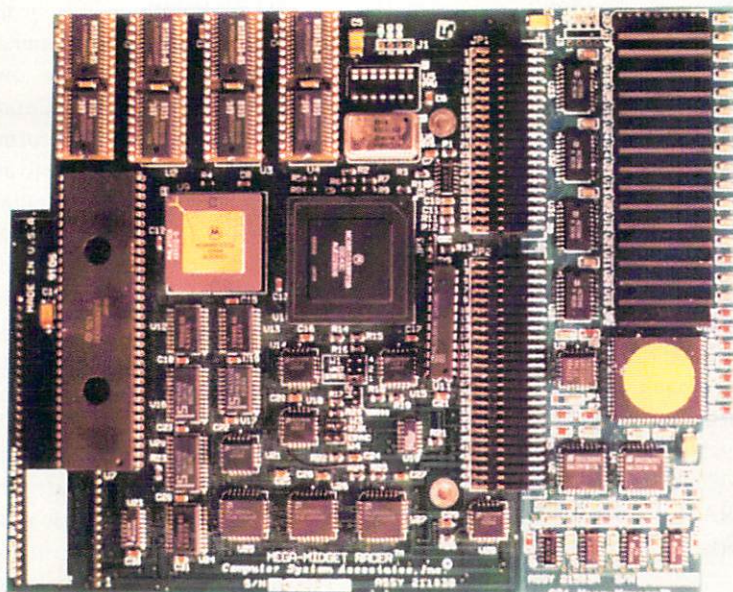
COMPUTER SYSTEMS ASSOCIATES' Mega-Midget Racer

by Mike C. Corbett

CSA provides the answer to the Amiga owner's need for speed

WHEN THE AMIGA 1000 was first released it was considered to be state of the art. At its heart was a Motorola 68000 CPU chip running at 7.14 MHz. In 1985 that was powerful. As the years have passed there have been many improvements in computer technology. Since then Motorola has released the 68020, the 68030, and just recently, the 68040. The latest version of the Amiga is the A3000, powered by a 25 MHz 68030 CPU, with roughly eight times the computing power of the original Amiga 1000.

The Mega-Midget Racer is a 68030-based accelerator available in either 25 or 33MHz speeds.



Software has also become more demanding over the intervening years. Many of us have found the "stock" Amiga 1000 to be just too slow for some of the software available today. Rendering programs such as Turbo Silver and desktop publishing programs need all the horsepower they can get. It's true that the speed of the newer Amiga models is quite attractive, but many people would like to keep their "Old Faithful" model 1000.

To help with this dilemma, Computer Systems Associates has developed the Mega-Midget Racer. The Mega-Midget Racer is a 68030-based accelerator available in either 25 or 33 MHz speeds for the Amiga 500, 1000 and 2000. There is also a new budget model available for the most cost-conscious among us.

This economy version is identical to the original except that it lacks an MMU, or memory management unit, a piece of hardware inside the CPU chip that is not used by the AmigaDOS operating system. Also, the performance of the economy model is also identical to the original version, so unless you will be running UNIX or the AMAX Macintosh emulator, the MMU is redundant.

For this review the 25 MHz budget version was chosen, with a 2MB memory expansion, 68882 math coprocessor, and 512K static RAM.

Initial Considerations

Before deciding to purchase a Mega-Midget Racer, one should be aware of several things. First, the Mega-Midget Racer must be installed in a system that has Kickstart 1.3 in ROM, or Read Only Memory. All models of the Amiga made after the 1000 have this (i.e. 500, 2000, 3000). However, since the Kickstart had not been finalized at the time the 1000 was first scheduled for release, it was decided to have the computer read the operating system from disk, allowing easy distribution of updates to Amiga owners. Because of internal timing considerations, the

Mega-Midget Racer requires this be loaded in ROM instead of from disk.

Another consideration is FAST RAM speed. Random access memory chips are manufactured in a variety of speed ratings, with the most common speed-rated chips found in Amiga systems being 120 nanoseconds. This means that they can be accessed at a minimum time interval of 120 nanoseconds, or ten-millionths of a second.

While this may seem incredibly fast to you and me, it is not adequate for the Mega-Midget Racer. The slowest rated chips that it can reliably use is 100 ns RAM.

The only way to tell what speed RAM chips are being used is to open up the Amiga and look at the chips themselves. On all RAM chips manufactured there is a code number indicating their size and speed rating, usually something like "41256-12." The number 41 indicates a dynamic RAM chip, the 256 means a capacity of 256K bits, and the 12 means that the chip is rated at 120 ns. The numbers on other chips will vary accordingly.

Please note that RAM speed is only important on expansion memory beyond the normal 512K on the Amiga 1000. CHIP RAM (as opposed to FAST RAM) speed is generally irrelevant to the Mega-Midget Racer.

There is also the problem of space. In order for the Mega-Midget Racer to fit inside the case of the 1000, the original internal floppy disk drive must be replaced with a special, low profile drive, and a large notch must be cut in the internal metal shield. The notch is needed because the Mega-Midget Racer actually sits on top of this shield and a connection runs to the motherboard underneath.

The relative difficulty of performing these modifications makes this a job that is best left to trained technicians or those who are technically adept. Fortunately, CSA offers the service of installing the 1.3 ROMs and the replacement floppy drive along with the Mega-Midget Racer itself.

This service is highly recommended to ensure proper installation of the system and as protection against

any unforeseen problems. When the test system was sent in, it was discovered by CSA that it had an unusually old motherboard. Because of this, CSA had to perform some extra work to allow their accelerator to work. A special adapter board had to be used for the 1.3 Kickstart ROMs and several of the pins on the motherboard had to be shortened to allow the ROM adapter board to fit under the internal shield.

Having CSA perform the installation also guarantees compatibility with your other expansion devices. There are many differences between similar devices from different manufacturers, and it would be very disappointing to find that your memory expansion or hard drive refuses to work after the Mega-Midget Racer is installed.

Be prepared for a wait, though. CSA averages two weeks for install time, to which the shipping time to and from San Diego, CA, must be added. This can add up to being without your computer for up to four weeks.

Documentation

The user's manual supplied with the Mega-Midget Racer is 21 pages long and covers most things the new user will want to know. The most obvious omission is in the installation instructions. The manual details procedures for only the Amiga 500 and 2000 models, with nothing specifically directed to the A1000 model owners. While this lack is understandable, owing to the complexity of the task and the likelihood that CSA will perform that work, it would be instructive to at least see a reference to A1000 installation procedures.

Otherwise the manual is well written, if not excessively thorough, giving insight to the internal workings of the unit. It is, though, somewhat of an annoyance that several things are mentioned without any explanation as to their purpose. One example is the description of the software which toggles the 68030 processor's instruction cache on and off. Being able to do this is nice but no hint is given as to why one would want to do it.

CSA's 40/4 Magnum

by Mike C. Corbett

CSA has recently announced the coming availability of their newest accelerator product, called the 40/4 Magnum. At the heart of the 40/4 Magnum is a 68040 CPU, the newest in the Motorola line, clocked at 25 MHz. The Magnum will be available only for the Amiga 2000, plugging into the processor slot.

The 40/4 Magnum has some impressive specifications:

- 1MB 32-bit static RAM
- Up to 64MB 32-bit dynamic RAM
- 5MB/second SCSI controller with DMA into 32-bit RAM

- High-speed serial and parallel ports
- Eight layer PC board construction
- Surface mount technology

As of this writing, the first units are scheduled to go on sale in mid-October, so they should be available by the time you read this. Performance is expected to be a minimum of two times that of a similarly-clocked Mega-Midget Racer, but current expectations are for much better. The expected list price is \$3395.00. This board will include 1MB S-RAM, 4MB D-RAM, SCSI and other ports.

Supplied Software

The Mega-Midget Racer package contains a floppy disk with Workbench 1.3 and various support software. Along with the expected benchmarking programs is software to configure 32-bit RAM and static RAM, to switch processor caching on or off, and to reboot the system in 68000 processor mode.

Speed!

Once the Mega-Midget Racer is installed and everything is working properly, the big question is "Just how fast is it?" The answer is "roughly eight times faster." With the 25 MHz Mega-Midget Racer installed, the Amiga 1000 attains computing power on par with a 25 MHz Amiga 3000. Testing shows the Mega-Midget Racer to perform within 10% of the A3000 on all benchmarks run. In many cases the difference is in the Mega-Midget Racer's favor!

The general feel of the system is quite good. Windows snap open more briskly, programs load in less time, and multitasking becomes comfortable. Formatting disks in background no longer slows down your database application, and screen redraws in PageStream are blindingly fast.

One factor in system performance is RAM. Although memory on the A1000 is normally accessed 16 bits at a time, the 68030 CPU chip reads data in 32-bit segments. Unless the computer

Testing shows the Mega-Midget Racer to perform within 10% of the A3000.

has 32-bit RAM, the CPU is often forced to read data in two 16-bit segments, reducing the effective speed of the accelerator by up to 50%. Because of this, the 32-bit RAM is the most recommended addition to the basic Mega-Midget Racer package. CSA has a line of expansion RAM available for the Mega-Midget Racer that has a "data path" that is 32 bits wide to the CPU.

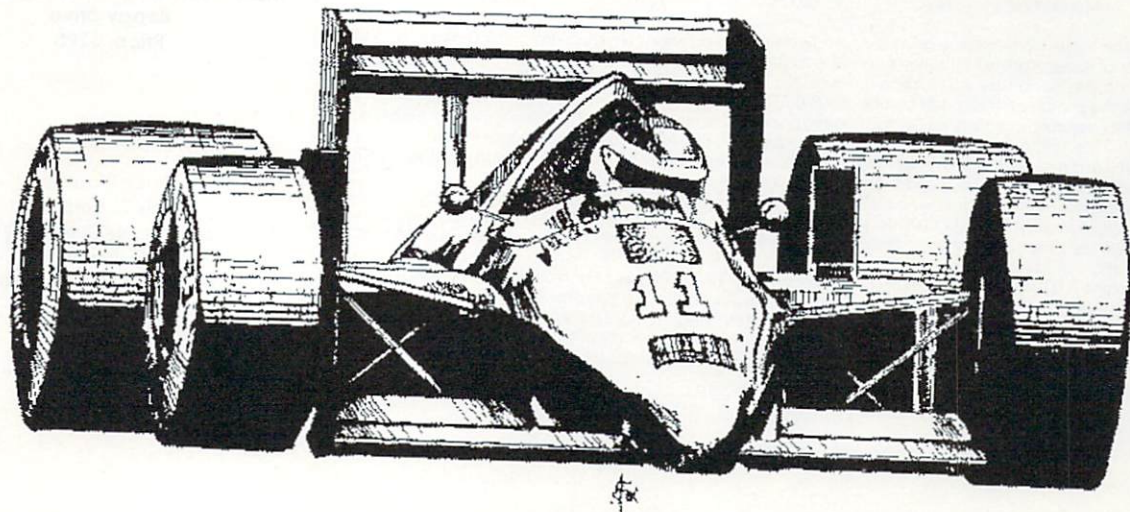
Another possible add-on to consider is a 68882 floating point unit, or math co-processor. The math co-processor is a special purpose chip that performs floating point math calculations much faster than the 68030 CPU.

If the software being used is written to use it, the speed improvement can be amazing. Speed-ups of 30 to 60 times can be seen in special versions of programs written to use the math chip.

This is an important point. If the software you are planning to use has not been written to use the floating point math co-processor, no additional speed-up will be realized from having it installed.

Yet another possible enhancement to be considered is 512K of static RAM. Having this affords a two-fold system improvement. The primary purpose of the static RAM is to allow the Kickstart to be moved from the 16-bit system memory into a special area of high-speed 32-bit memory, allowing any direct calls to the operating system by a program to execute much more quickly.

The other benefit from this static RAM is that once Kickstart has been moved into this area, the 512K region of RAM it was previously in becomes available for use as normal system memory. However, the nature of the Mega-Midget Racer is such that having that Kickstart in static RAM shows only a minor speed-up of normal operations of about 10%. So, unless you are doing a great deal of number crunching, the money is most likely better spent elsewhere.



Compatibility

One of the major problems computer owners find when upgrading their hardware is finding out that some piece of software or other no longer works. In particular, many games for the Amiga have been written such that they will work perfectly on machines with the 68000 processor, but will cause the more advanced 68020- and 68030-based machines to crash. This fact has been the most significant problem facing owners of the Amiga 3000.

The Mega-Midget Racer avoids this problem by retaining the 68000 processor. By simply clicking on the appropriate icon on the supplied software disk the system will reboot in 68000 mode. There is also the possibility of wiring a switch to a pair of jumper points on the Mega-Midget Racer, allowing the system to boot using either CPU.

This feature gives the Mega-Midget Racer a 100% software compatibility rating, an important consider-

ation for those who like to play and work on their computer.

Running in 68000 mode is not without its limitations, however. With the main 68030 CPU disabled, the entire Mega-Midget Racer is disabled, taking the 32-bit RAM and the math chip with it. This is inevitable because those things are accessed only through the 68030 CPU.

Support

Support is provided via toll phone call to CSA in San Diego, CA. The staff was found to be knowledgeable and able to quickly answer all technical questions. For a warranty, service (90 days) is provided at the CSA headquarters, with return shipping covered by CSA.

Conclusions

CSA has come up with another winner in their product line. Once the admittedly complex installation has been completed, the venerable Amiga

1000 becomes a computing powerhouse, comparing favorably with the latest models. The extra money spent to have CSA perform the installation is money well spent. While the manual could stand some improvement, the Mega-Midget Racer unit is a well-engineered piece of hardware that retains compatibility with all software.

CSA also offers discounts from their list prices, bringing the real cost of a system down to mail-order house levels, greatly enhancing the value of going directly to the manufacturer. If you call them, be sure to ask about the discounts.

If you find yourself in need of more computing power, and still want to keep your old "pizza box," the Mega-Midget Racer is worthy of your consideration.

•AC•

Mega-Midget Racer

Price: \$599 (25 MHz), \$699 (33 MHz)—
budget version
\$895 (25 MHz), \$1095 (33 MHz)—
regular version
Computer Systems Associates
7564 Trade Street
San Diego, CA 92121
(619) 566-3911
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Additional Hardware and Installation from CSA

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Price: \$295

Please Write to:
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P.O. Box 869
Fall River, MA 02722-0869

Test Name	Compared to Normal A1000		Compared to A3000/25 MHz	
	A3000/25	MMR	A1000	MMR
WritePixel	337%	307%	30%	92%
Dhrystone	560%	615%	18%	110%
Sort	720%	738%	14%	102%
Sieve	817%	830%	12%	101%
Savage	610%	650%	16%	106%
Matrix	766%	772%	13%	101%
Mandelbrot	N/A	5500%	N/A	N/A

The above chart shows performance as a percentage relative to an unaccelerated Amiga 1000 and to a 25 MHz Amiga 3000 and, except for the Mandelbrot, were performed with "AIBB2," the Amiga Intuition-Based Benchmarks, written by LaMonte Koop. The AIBB2 program was not written to use the 68882 math co-processor and so demonstrates the improvements made by only the 68030 CPU.

The Mandelbrot program does use the floating point unit, as evidenced by the dramatic improvement over the normal Amiga 1000, and is in the software supplied by CSA with the Mega-Midget Racer.

WritePixel measures the time it takes to draw a box on the screen one pixel at a time using the AmigaDOS system function WritePixel(), and then erases it, also one pixel at a time.

Sieve performs a search for prime numbers from a set of 8191 numbers.

Sort sorts a jumbled list of 12,000 integers.

Savage tests floating point execution speed (but not the floating point chip) by performing a series of operations on a number.

Dhrystone is a test that simulates in a very precise way the operation of a "typical" program.

Matrix times the addition and multiplication of three 40 x 40 integer matrices.

From examining the test results, one might easily conclude that the Mega-Midget Racer is faster than a 25 MHz Amiga 3000, though such is not the case. Overall the A3000 is a faster machine, a benefit of its more advanced technology. With its internal SCSI hard drive, 32-bit internal architecture, and more developed co-processor set, in everyday use it is still the one to beat.—MC



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LandScape

There's no need to pay a professional landscaper when you can design your entire garden in just a short time with LandScape. This simple CAD (Computer-Aided Design) program lets you lay out your garden with everything from the earth to trees and flowers. There are two parts to LandScape, the Editor/Design module and the Drawing module. When the layout is finished using the Editor, LandScape's Drawing module will draw a 3-D version of your garden to give it a "real life" look.

Once loaded, LandScape will present you with a blank screen. Before you start laying down footpaths and planting big shady trees, you must determine a boundary for your garden. To prevent you from trying to do anything before this step, all options are ghosted except the Boundary option. Select boundary from the Edit menu and type in the correct area of your garden. You are determining how many pixels represent a certain number of centimeters. Once this is set, you are ready to map out your garden boundary. The cursor will now be a crosshair that allows you to point and click on the screen to outline your garden. A white line will be drawn from one point to the next to show the garden outline you are creating. This allows you to make a garden of any shape.

Once your boundary is defined (displayed with white lines) the next logical step is to lay down area objects—earth, lawn, and footpaths. However, LandScape allows you to plant flowers before putting down any area objects; it just makes more sense to put down the earth and then flowers and trees. Area objects are drawn in the same fashion as boundaries, and each object is cleverly color-coded to distinguish among them—lawns are green lines.

Selecting plants, flowers, and trees is even easier. Select the type of plant—tree, flowering plant, or non-flowering plant—and when the cursor turns into a symbol representing your selection, you can start planting. Flowering plants gives you the option of choosing color, and all plants can have different sizes. Once a plant is selected, you can keep planting without having to re-select each time. You can place something outside the boundary, but it is not suggested. Don't forget to add some footpaths or leave earth showing to have flower beds. The documentation gives some helpful tips on how to create a flower bed in the center of your garden and how to create circular areas of plants. Also there is a complete list of available plants in the documentation.

You have now completed the Design module of LandScape. Once this is completed, you should save your work. The documentation recommends every 15 minutes. Also, once you have selected Draw to see your garden in 3-D, you cannot save the garden plan, so make sure you do a save before viewing your masterpiece. One convenient feature of the save option is the ability to save the garden in both IFF and data format. The IFF format is neat because then you can load your garden into your favorite IFF paint program for further enhancement. Be careful: if you do choose to save as an IFF, you will not be able to open your file again as a LandScape file. To open your file again in the future, save your garden as a data file.

by Aimée B. Abren

The Drawing module lets you view your garden from different view points. LandScape uses 3-D rotation when viewing your garden. This concept is explained well in the documentation. After experimenting with the angle and zoom options, select Quit, and LandScape will attempt to draw your garden.

The documentation file is one of the few—actually I can't remember any that do—that include a tutorial throughout the file. This is a great way to get comfortable with the program while you're still reading about all the available features.

I have few complaints about LandScape. There is no Undo command, so that once you delete a plant, you can't get it back. To delete an object, you first must select "Seletc" from the menu, then point and click on the object, and then go back to the menu and select Delete. After that you are presented with a requester asking you if you are sure you want to delete the selected object. I think selecting an object and then hitting the delete key would be much easier. One helpful feature is that the coordinates of the cursor are displayed in the top right corner of the screen. This is helpful when placing your plants.

Future enhancements may include more objects to work with such as stones, walls, fences and ponds, and, of course, more plants, as well as icons for IFF-saved files and on-line help.

So if you're looking for something different, LandScape is it. It's easy to learn with the help of the tutorial so that you'll be creating gardens in no time. Who knows, maybe your friends will want you to design their gardens.

LandScape v1.0 can be found on Fred Fish Disk #521 and can be run from the Workbench or CLI. It is multitasking and needs the arp.library to run. The documentation claims uncertainty as to whether LandScape runs under 2.0. I could not get it to run. Author: Steve Goddard

LITTLE EXTRAS

T3E

T3E is a great little program that allows you to save a text file as an executable file based on the program Txt2Exe, except that there is no limited size for the file. Creating the executable file is accomplished by typing the following at the CLI prompt:

```
T3E <filename> <newexecutablefilename>
```

That's it. To execute your new file, simply type the name at the CLI prompt.

T3E can be found on Fred Fish Disk #521 and is run from the CLI. Author: Gary Glendown

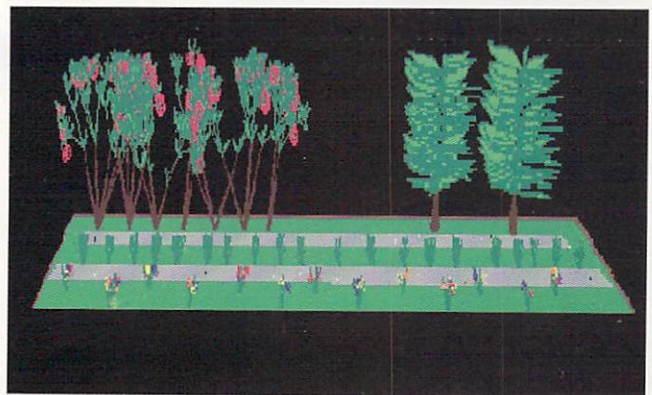
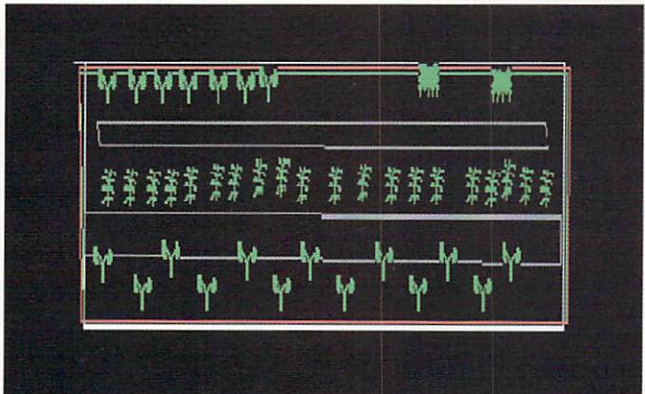
Snap v1.61

Another neat little program I found this month is Snap. Snap is a program that will allow you to select a piece of text anywhere on the screen, and then paste it somewhere like at the CLI prompt. This text could be part of a program's documentation, or the name of an icon.

To activate Snap just double-click on the icon. Then when you see a piece of text you want, place the pointer over the first letter and hit the left Amiga key, and then the left mouse button. If you want more the the letter, drag the pointer across. When your selection is complete, release the left mouse button first, and then the left Amiga key. To place your text, place the pointer over the spot where you want the text placed, hold down the left Amiga key and then hit the right mouse button. That's it. Your text is now placed. You can also store the text in a window for later use.

Snap remembers bold, inverted, and underlined characters. Snap also can grab graphics and save them to the clipboard. Check it out.

Snap v1.61 can be found on Fred Fish Disk #524 and can be run from the CLI or Workbench. Author: Mikael Karlsson



Top: Demonstrating a garden layout in LandScape's Edit module. Bottom: Demonstrating a garden in LandScape's Draw module.

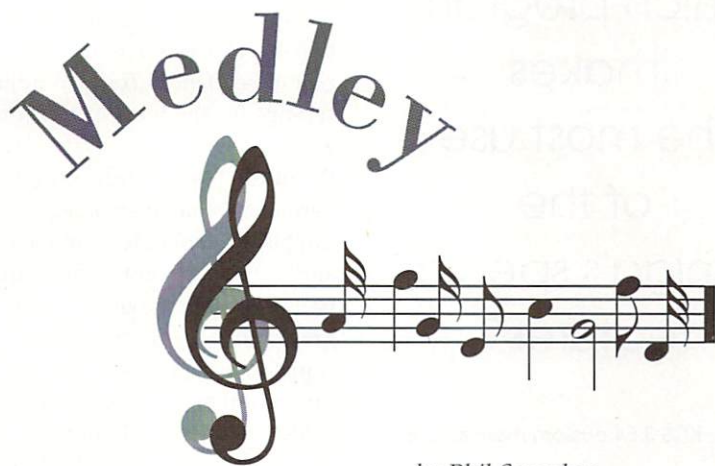
(continued on page 92)

AC Disks

Source code and executable programs included for all articles printed in *Amazing Computing*.

- 10 AC V5.6 and V5.7**
Convergence: Part five of the Fractal series.
Author: Paul Castonguay
- Amiga Turtle Graphics:** Computer graphics and programming with a LOGO-like graphics system.
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Author: Gerry L. Penrose.
- 11 AC V5.8, V5.9 and AC V5.10**
Fully Utilizing the 68881 Math Coprocessor Part III: Timings and Turbo_Pixel Function. Author: Read Predmore.
- C Notes From the C Group 5.8 & 5.10:** Functions supporting doubly linked lists, and a program that will examine an archive file and remove any files that have been extracted.
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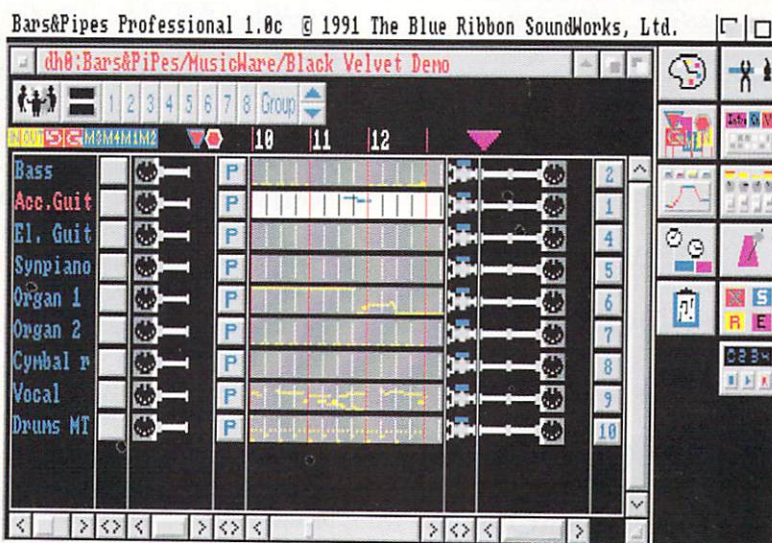
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- 15 AC V6.6, V6.7, V6.8, & V6.9**
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- Puzzled Over ARexx:** For the intermediate programmer, Merrill offers a solution to the puzzle of ARexx. Author: Merrill Callaway



by Phil Saunders

LET'S START WITH the bottom line: I don't think you can go wrong with either *Bars&Pipes Professional* or *KCS 3.54*. Both have a variety of editing features and synchronization options, and can be used to create professional quality music. Nevertheless, the programs have some significant differences, and one may meet your needs better than the other. I reviewed the programs separately in the past two issues; this article will concentrate on the differences between them.

Bars&Pipes Professional's colorful main screen.



While I have included a short feature comparison chart, subjective opinions about design choices and ease of use are an essential part of this kind of a comparative review.

One question is which program makes the most use of the Amiga's special features? *KCS* was ported from the Atari ST version, while *Bars&Pipes Professional* was developed specifically for the Amiga. *KCS* does make innovative use of special Amiga features, such as multitasking for each MPE module, and multiple screens. It is quite good about sharing the serial port with other programs. Support for Amiga internal sounds is included. *KCS* uses Amiga standard pull-down menus and file requesters, and also supports changing the screen colors. Interlace is supported only in the Quickscore module. *Bars&Pipes Professional* is much more Amiga-oriented. This is evident both in the program's appearance and operation. *Bars&Pipes Professional* makes full use of color, interlace mode, windows, menus, and other Amiga features. The Amiga orientation is also evident at a deeper level: Many of the components of *Bars&Pipes Professional* run as separate Amiga tasks that communicate with each other. This multitasking, modular design makes it possible to easily upgrade the program to support new features. While *Bars&Pipes Professional* does not come with support for internal Amiga sounds, this can be added via the *AmigaPhone* module, which comes with a variety of sounds. A *Bars&Pipes Professional* player program and support for SMUS files are available in the Multi-Media kit. *ARexx* support is also available as an add-on. On the whole, *Bars&Pipes Professional* is more "Amigatized."

Synchronization is an important consideration for a professional sequencer. *KCS* supports MIDI sync, Song Position Pointer, and SMPTE via their Phantom SMPTE interface. *Bars&Pipes Professional* supports all these methods as well as MIDI Time Code, which

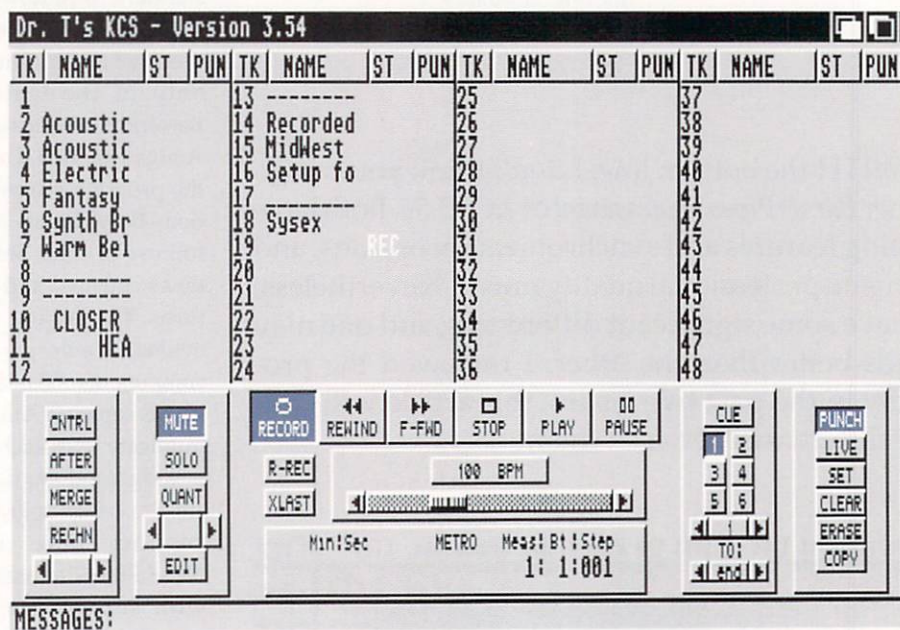
is often used to synchronize tape recorders using SMPTE. Both programs support the Phantom SMPTE interface. Bars&Pipes Professional really shines when it comes to working with SMPTE and synchronizing to video. It includes a special time-line scoring window which allows you to start and stop songs at specific SMPTE times and also has tools to automatically change tempo to "fit" specific start and end points. KCS's only special support is a program to display SMPTE times. While KCS supports tempo changes and has commands to speed up or slow down the tempo, Bars&Pipes Professional has a special window to create and edit tempo maps

and offers a variety of tempo transitions. Bars&Pipes Professional also supports locking sequences or events to SMPTE times, allowing the use of multiple, independent tempos. Overall, Bars&Pipes Professional has an advantage over KCS in terms of synchronization and tempo options. Many of its advanced features are extremely useful for video scoring applications.

Editing is the biggest difference between the two programs. Bars&Pipes Professional uses "tools" as the main means of editing. Tools can process MIDI notes as they are recorded or played back, or can be used to edit a sequence that's already recorded. As Bars&Pipes Professional plays, it creates the next measure that will be played and puts it into the play pipeline. Since the pipeline is created each time a sequence is played, tools can process the underlying MIDI notes and move them

One question is
which program
makes
the most use
of the
Amiga's special
features?

Below: KCS 3.54 custom main screen.



I already
gave away
the bottom line:
both programs
are capable,
professional
MIDI sequencers.

forward or backward in time. This approach allows non-destructive editing and quantization as well as numerous effects like echo and randomization that can be different each time you play a sequence. You can adjust the settings for the tools in real-time, but you can't edit the underlying notes as the music plays. If you want to make permanent changes to a sequence, you can place a tool or tools in the toolpad and apply them to the sequence. Bars&Pipes Professional tools add a great deal of flexibility and expandability to the sequencer. You can program tools to perform MIDI splits or other MIDI effects automati-

cally. In addition to tool-based editing, Bars&Pipes Professional has a sequence editor that lets you edit notes using a piano roll, a hybrid staff, or true music notation. While the standard notation display has a number of small bugs, Bars&Pipes Professional is the only Amiga MIDI sequencer to allow true notation editing.

Personally, I feel notation is the most natural way to edit note data, and Bars&Pipes Professional lets me do it. It also allows somewhat limited event-list editing. While there are some nice editing features, there are also some rough edges.

KCS has always offered tremendous power in its event-list editing. Event-list editing allows detailed editing of each note's timing, velocity, start time, and other features. While it allows total control, event-list editing in KCS requires dealing with numeric values for every note. The Level II

Master Editor also allows precise editing of notes based on algorithmic principles. In addition, KCS includes the Programmable Variations Generator, which can generate alternate versions of a sequence under complete user control. Tiger adds real-time graphic editing features to KCS's event editing. The biggest advantage to Tiger is that almost all editing can take place in real-time as the music plays. This lets you hear, and see, mistakes and correct them quickly. KCS lacks the MIDI effects and some of the programmable tools found in Bars&Pipes Professional, but has a solid, effective interface. Its event-list editing is more powerful than Bars&Pipes Professional. If standard notation is important to you, then Bars&Pipes Professional is your only choice. In other respects, I find KCS to have more powerful and consistent editing, even though it lacks Bars&Pipes Professional MIDI effects capability.

Expandability is another important consideration. KCS can be expanded by adding the Copyist, a Dr. T patch editor/librarian, or XOR (Dr. T's generic synthesizer editor/librarian). Any of these programs can be run with KCS using the multi-program environment. KCS currently has no provisions for using a multi-port serial board in order to address more than 16 MIDI channels at a time. Other changes to the program will require updates by Dr. T's. Bars&Pipes Professional, on the other hand, already has a number of expansion modules. Most of these are in the form of tools or accessories that link into the main program. Current add-ons include Music Box A and B (tools and accessories), the Internal Sounds Kit (adds support for Amiga sounds), and the Multi-Media Kit (adds ARexx, MIDI Player, and SMUS support). More add-on kits are currently in the works. The Blue Ribbon SoundWorks is planning to add support for CD-quality hard disk recording using a 16-bit audio digitizer card. They also plan to release a universal patch librarian. The add-on kits currently released include support for

Synchronization is an important consideration for a professional sequencer.

multi-port interfaces. In addition to the macro capability found in the "Create-a-tool" function, you can also use "Rules for Tools," which has instructions for writing your own Bars&Pipes Professional tools using "C."

Ease of use is another important consideration. Both programs require a fair amount of effort on the part of the user. If you have worked with another MIDI sequencer, I think you will find KCS's Track Mode to be easy to use immediately. With Bars&Pipes Professional, things are set up differently, and it takes a little bit longer to get going. Both programs require a significant investment of time to learn to use them to their full potential. Both companies offer good support for their products. The Blue Ribbon SoundWorks maintains a very active presence in the CompuServe MIDI forum, while Dr. T's has recently moved on-line support to GENIE. In my experience, The Blue Ribbon SoundWorks seems to offer more frequent updates,

FEATURE	KCS	B&P Pro	Comments
<i>Amiga Customization</i>			
Supports MultiTasking ?	Yes	Yes	Quickscore only
Interlace Mode	No*	Yes	
Windows/Mouse support	Yes	Yes	With Add-on kit
Multi-channel interface	No	Yes*	
Amiga sound support	Yes	Yes*	
<i>Sequencing Environment</i>			
Track Mode	Yes	Yes	
Looping	Yes	Yes	
Song Construction Mode	Yes	Yes	
<i>Quantization</i>			
Variable Resolution	Yes	Yes	
Real Time	No	Yes	
Percentage (swing)	Yes	Yes	
To Reference Sequence	Yes	No	
<i>Editing</i>			
Graphic Editing	Yes	Yes	With Add-on kit
In real time?	Yes	No	
Standard Notation Display	Yes	Yes	
Standard Notation Editing	No	Yes	
Notation Printing	Yes	Yes	
Pitch Mapping	Yes	Yes*	
Generate Variations	Yes	Yes	
<i>Synchronization</i>			
Midi Sync	Yes	Yes	
Song Position Pointer	Yes	Yes	
MIDI Time Code	No	Yes	
SMPTE support	Yes	Yes	
Phantom support	Yes	Yes	
Sequencer Resolution (Beats per minute)	384	192	

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often with additional features, while Dr. T's waits longer between upgrades. On the other hand, KCS has a good reputation as a very stable product. Both programs do have their share of minor bugs.

Both programs have a number of common features. Bars&Pipes Professional uses a graphic song editor screen to assemble songs, while Dr. T's song editor uses a text-oriented approach. Both programs can record Sysex data, including multi-part sysex dumps. Both programs have good manuals, with a slight edge to KCS because of the manual's completeness and superior index. KCS's open mode has a number of special characteristics for live use. You can also use open mode's loopback recording to create special mixes of MIDI sequences. KCS uses a limited form of remote control based on the use of MIDI pedals, while Bars&Pipes Professional can assign six commands to user-specified MIDI notes. Bars&Pipes Professional tools allow more sophisticated MIDI processing of incoming notes, including changing one event type to another. It wouldn't be too difficult for The Blue Ribbon SoundWorks to expand Bars&Pipes Professional to include "Band-in-a-Box" auto-accompaniment features. Rudimentary accompaniment features are already available, and add-on kits expand on this capability.

I already gave away the bottom line: both programs are capable, professional MIDI sequencers. Nevertheless, I can make some general recommendations. If you are interested in scoring for video, Bars&Pipes Professional's extra video, multimedia, and SMPTE features make it the way to go. If notation editing is important, you'll want to choose Bars&Pipes Professional. If you have experience with another sequencer, you will likely find it easier to get started with KCS. I feel KCS has better editing features, especially with the addition of Tiger's real-time graphic editing. If you are interested in programming or sophisticated MIDI manipulation, Bars&Pipes Pro-

fessional has the commands you need to perform these functions. The tools and pipeline encourage experimentation and building up songs from scratch using MIDI effects. On the other hand, the KCS programmable variations generator can create unique variations on an input sequence. A final consideration is price. While both programs have similar price tags, KCS comes complete, while Bars&Pipes Professional has four separate expansion kits which cost \$59 each. To get some features included with KCS, like internal sounds, you have to buy Bars&Pipes Professional expansion kits. The ideal solution is to buy both programs; their strengths complement each other. I find myself using KCS most often, though I will often import a song into Bars&Pipes Professional to use notation editing or a particular tool that doesn't have a KCS counterpart. Competition has improved both programs. No matter which you choose, you can create great music.

•AC•

Keyboard Controlled Sequencer 3.54

Price: \$400.00

Dr. T's Music Software
100 Crescent Rd.
Needham, MA 02194
(617) 455-1454
Inquiry #246

Bars&Pipes Professional

Price: \$379.00

The Blue Ribbon Soundworks Ltd.
1293 Briar Dell Lane NE
Atlanta, GA 30306
(404) 377-1514
Inquiry #247

Please Write to:

Phil Saunders
c/o Amazing Computing
P.O. Box 869
Fall River, MA 02722-0869

bug bytes

The latest in tips,
workarounds and upgrades

by John Steiner

product: CMI Processor Accelerator
re: Accelerator bug
source: Reader mail

In the electronic mailbag this month, I received EMail from Phil Combs regarding his CMI Processor Accelerator. He writes "I own a CMI Processor Accelerator for the A2000. It does not work correctly—everything's okay in regular speed, but kicking the A2000 into turbo mode reboots the computer.

"From what I understand, CMI has gone belly-up. Do you know who, if anyone, is still supporting the Processor Accelerator, or providing repairs? I would appreciate any help you could give me."

In a follow-up letter, he writes that he discovered DIGIFEX in Oregon City, OR, bought the rights to most of CMI's products, but they were not supporting

the Processor Accelerators. Phil has traced the problem to the three custom PAL chips on the board. DIGIFEX, he said, does not have either the PAL chips or their equations. He is looking for someone who can make copies of the three PAL chips to return his accelerator to working order. If you have any information about this process, let me know, I'll pass the information along.

product: ATonce board
re: Product update
source: Reader mail

In the U.S. mail, I received a letter from Joe Shaughnessy regarding ATonce updates. He comments that the only IBM mouse driver he has been able to make work is the one found on the Genius mouse. The Genius mouse is an inexpensive clone mouse for IBM compatibles that costs

about \$20 to \$30. He also reports the poor performance of his ATonce board was improved greatly when he had his local dealer install a Fatter Agnus, the one megabyte chip RAM upgrade. Mr. Shaughnessy has also received permission to upload ATonce upgrades as they become available from Vortex. As a result, you can look for the latest ATonce upgrades on your favorite information service or BBS.

product: Proper Grammer
re: Product update
source: Electronic mail

In electronic mail, I received a letter from Kevin Davidson who writes that he received a letter from Softwood Corporation. They are offering to send the latest Proper Grammer Update (v1.4) for \$2 or for \$1 plus the original program

disk. For more details, contact Softwood directly.

Softwood, Inc.
P.O. Box 50178
Phoenix, AR 85076
(800) 247-8314

product: AmigaBASIC
re: Workaround for A3000 & AmigaBASIC
source: Reader mail

Since getting my Amiga 3000, the A2000 I've had for some years has been idle. Its major use has been to run AmigaBASIC on the rare occasion I've wanted to write some code. The only traditional computer language I'm really comfortable with is BASIC. AmigaBASIC is not included on the A3000. When I tried to run it on the A3000, it would not work. I realize that I could have purchased several BASIC interpreters, but I don't do enough work in BASIC to justify the expense. I do own AC BASIC which appears to run fine on the A3000, and I have used it to compile BASIC output I've already written. I like the interactivity of running an interpreted BASIC, however, and I like to run AmigaBASIC while I'm debugging and developing a program. When I have finished the program, I run it through AC BASIC to compile it.

The reason I am bringing this up is that I have found an apparent workaround that does allow AmigaBASIC to run on the A3000. Simply run

NoFastMem on the A3000 before you start AmigaBASIC. A friend made this suggestion. He saw the item on a BBS he checks into somewhere. I have only had the chance to experiment with this workaround a little; however, it appears to allow AmigaBASIC to function properly. AmigaBASIC starts, loads, and runs several previously developed applications. It also is a little faster when running on the A3000. Surprisingly, however, it doesn't run nearly as fast as I thought it might. If anyone knows of problems when running AmigaBASIC on the A3000 that could cause problems, please let me know.

product: A-Sound 2.0
re: A-Sound Elite feature

A notice was sent to registered users of A-Sound 2.0 about the availability of A-Sound Elite. The newly remodelled software features ARexx support, sequence loop editing and playback, an UNDO command, stereo operation in all modes, 16-bit editing, and freehand editing support. The upgrade is available for registered users only, and is priced at \$44.95 U.S. + \$3 U.S. shipping and handling. For more information, contact them at

Deltaware Products
3148 Kingston Road, Suite 202
Box 395
Toronto, Canada M1M 1P4
(416) 431-2047

product: DeluxePaint IV
re: Product upgrade

The word has been out for some time that DeluxePaint IV would be released soon. Registered users have been notified by mail that they can purchase an upgrade which should be shipping by the time you read this. A partial list of new features includes support for HAM mode in both Paint and Animation modes. A light table option allows you to "see through" the current frame to view the previous three frames and the spare page. A metamorphosis function transposes the shape and image of one brush into any other brush. A translucency effect can be added to images. An animation control panel provides VCR-like controls when working with animation functions. Enhanced gradients, improved stencil function and a new color mixing feature are also included. To order the upgrade, you must send the title page from your DeluxePaint III manual and \$67 to:

DeluxePaint IV Upgrade
P.O. Box 7530
San Mateo, CA 94403

product: Nag Plus, Cal, FRED, Floorplan Construction Set
re: Software upgrades
source: Gramma Software spokesperson

A spokesperson for Gramma Software told me that several programs they produce have been upgraded. Nag Plus, a reminder/scheduler utility; Cal, an electronic calendar that also uses ARexx to interface with Nag Plus; FRED, the speed dialer, and the Floorplan Construction Set—all have been upgraded to work under Workbench 2.0. New features and bug fixes are part of the upgrade. If you are a registered user, you will have already received a notice of specific upgrade instructions by the time you read this. The cost for all Gramma Software upgrades is \$14.95. Customers who have recently purchased earlier versions from dealer stock can apply for a free upgrade. Details on proof of purchase requirements and other upgrade information is available directly from Gramma Software.

Gramma Software
17730 15th Ave NE #223
Seattle, WA 98155-3804
(206) 363-6417
Fax (206) 361-6417

product: DynaCADD 2.0
re: Product upgrade
source: Press release

According to a press release, Ditek International is shipping DynaCADD 2.0. This powerful computer-aided design program has been improved by the addition of 3D object output, DXF import and export capabilities, hidden line removal and color Postscript support. Users may upgrade at no charge by returning their original disks.

Ditek International
2651 John Street
Markham, Ontario
Canada L3R 2W5

product: Workbench 2.04
re: Product upgrade

The release version of Workbench 2.04 for Amiga 3000 systems has been shipped to Amiga dealers. The five-disk set contains an automatic installation procedure that searches your System2.0: partition, and deletes any obsolete 2.0 files before it begins installing the new software. The finished version also includes outline font support with two fonts, CGTimes, and Triumverate in several sizes. These fonts build themselves automatically when you choose a specific size from the menu. The letter that comes with the disks promises that A2000 and A500 users would be receiving informa-

tion on a ROM enhancer kit soon. The A3000 upgrade instructions are somewhat vague, and could cause problems if you fail to complete one step. You must first boot with the new Super Kickstart floppy disk before inserting the Install floppy. If you then click on the Update WB icon which is visible, all goes well with the installation process, and when finished, it tells you to reboot to begin using the new Workbench. If you then shut the CPU off to cold boot, the computer will continuously crash with a system requester when powered up again. Before you reboot the system, you must run the program that updates the Kickstart. The program icon isn't visible in the root directory on the update disk and the instructions don't mention this fact. You will find the Update Kickstart 2.x file in your tools drawer on the System2.0: partition. If you didn't complete this step, you must first load the new Kickstart from floppy, boot on the new Workbench and run the Update Kickstart 2.x program before you can boot from the hard disk again.

With regard to compatibility with earlier applications, I noticed enhanced performance from the latest 2.0 versions. Several programs which previously didn't run under 2.0 appear to work correctly under the release version.

product: Audition 4
re: Workaround
source: Reader mail

While I am on the topic of Workbench 2.0 compatibility, a letter I received this month reports a problem that can be fixed by getting the release v2.0. Anthony Wood of SunRize Industries writes to report that they have discovered a problem when using Audition 4 and certain versions of Workbench 2.0. While testing Audition 4, they used Kickstart version 36.303. Many 3000's are running version 36.207 Kickstart. With this earlier version Audition 4 crashes quite frequently. The release version 2.0 Kickstart is 37.175, and Workbench is in revision 37.67.

That's all for this month. If you have any workarounds or bugs to report, or if you know of any upgrades to commercial software, you may notify me by writing to:

John Steiner
c/o Amazing Computing
Box 869
Fall River, MA 02722

...or leave EMail to
73075,1735 on CompuServe

•AC•

Correction

During our constant effort to bring you the latest information from the Amiga Community, occasionally we make an error or inadvertently leave out a detail. In our October 1991 issue, we ran a review of ShowMaker, by Gold Disk. There are a few points in the article which need clarifying. We apologize for any confusion the inaccuracies may have caused.

—The Panasonic/Selectra AG-1960/RS is not a newer Panasonic model of the 1960. Selectra is a third party manufacturer who purchases AG-1960's from Panasonic, adds a RS232 serial port and control card and resells the decks as the Panasonic/Selectra AG-1960/RS.

—Selectra also produces a product called VuPort. ShowMaker currently supports both the AG-1960/RS and VuPort.

—To avoid locking up when ShowMaker is used to control an internal Video Toaster when setting up a series of toaster commands, the final command must be "Pop up Workbench."

—ShowMaker currently interfaces with Panasonic 5-pin edit jacks via the VuPort controller. Showmaker will control Sony Control-L hardware via the Sony Vbox, a serial port computer/VCR interface.

—Showmaker drivers for Future Video and V-Lan are currently under development and should be released soon.

Also, in the review of Spectracolor, in the September 1991 issue, the caption under the screenshot on page 35 is incorrect. The caption reads:

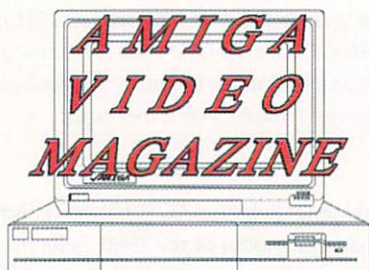
"All three toolkits can be on-screen at once. From top to bottom: Amin, Fast Menu, and Fast Menu with color manager."

Only one of the toolkits can be active at once. The screenshot was actually a composite image created to display the features available on each of the three separate configurations of Spectracolor's fast menu.

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Death Knights of
Krynn
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Death Knights of Krynn

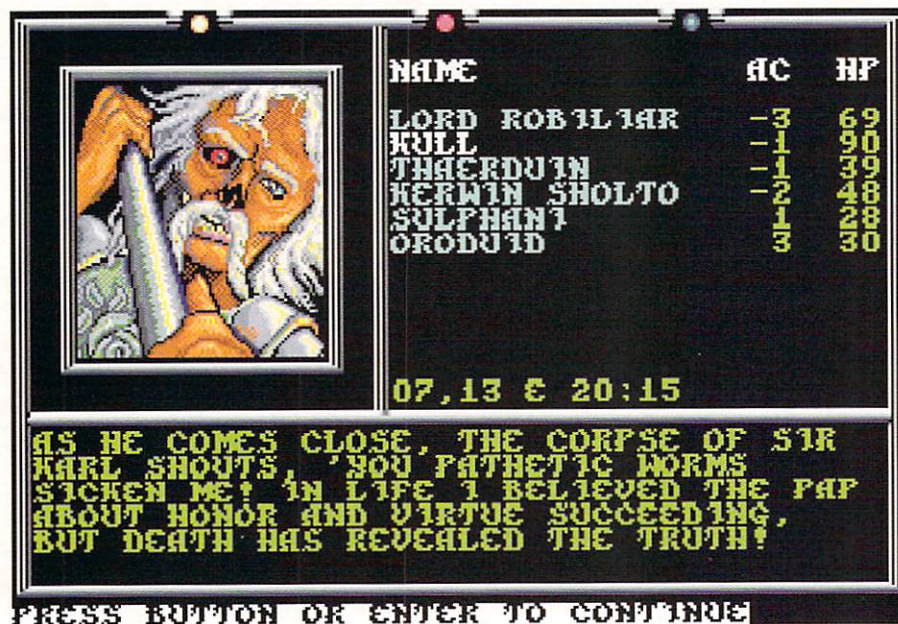
by Jeff James

Another product resulting from the collaboration of SSI and TSR, manufacturers of the popular *Advanced Dungeons & Dragons* pen and paper game, *Death Knights of Krynn* (Death Knights) picks up where its predecessor, the *Champions of Krynn* (Champions), left off.

Set in the land of Krynn, *Death Knights* takes your intrepid band of heroes on a dangerous quest to halt the ominous intentions of Lord Soth and his evil undead army. *Death Knights* allows players to transfer their characters from *Champions* to undertake the challenge, or a new party can be created from scratch.

Death Knights is based upon the playing interface pioneered in SSI's *Pool of Radiance* a few years back, used by nearly a half-dozen of SSI's games since then. Similar to *Bard's Tale* and *Might and Magic*, *Death Knights* shows that this playing interface is beginning to grow rather long in the tooth. My complaints may be falling upon the deaf ears of die-hard fantasy gamers, but I still think that SSI could add some much-needed improvements to the system.

Perhaps in answer to some of my whining, *Death Knights* does feature a few welcome embellishments upon that time-worn gaming system. Created in-house by the SSI special projects team, as was *Champions of Krynn*, the graphics and animation in *Death Knights* seem to be a bit better than what I've seen in other SSI offerings, providing full 32-color support. *Death Knights* also features a small collection of professionally drawn character icons for players to choose from. Gamers familiar with SSI's previous AD&D of-



Death Knights of Krynn.

ferings will be pleased to hear of other modest improvements, such as a character's name changing color if he or she has enough experience to advance to a new level. Spellcasters now will automatically remember the last spells you had them memorize when resting, bypassing the often tedious practice of manually having to tell each character what spells to retain.

The plot of *Death Knights* is another one of those hackneyed "save the world from the bad guy" themes, and the game's mouse support exhibits a somewhat quirky personality: some functions can be accessed by the mouse, some by keyboard, some by both. I'd love to see even one pull-down menu. *Death Knights* does work fine on all Amigas with at least 1MB of RAM, is fully hard disk installable, with an included icon-driven hard disk installation script, has off-disk copy protection, and even works on the new A3000 running AmigaDOS 2.0.

Overall, *Death Knights* is one of the better sequels I've played in quite a while, and all the extra little enhancements are in its favor. If you loved *Champions of Krynn*, *Death Knights* is sure to please. SSI's gold box series might not earn my vote as the best Amiga role-playing system, but *Death Knights* definitely nudges it a step further in the right direction.

Bandit Kings of Ancient China

by Jeff James

A new wargame from Koei, *Bandit Kings of Ancient China* (*Bandit Kings*) serves up a unique mix of Chinese history, military conquest, and eco-political simulation to create a richly-textured gaming experience.

Upon receiving my copy of *Bandit Kings*, my first impression was of the attention to detail that Koei lavished

upon their product. The game is shipped in a sturdy plastic case which encloses a thick game manual, an Amiga addendum sheet, a warranty registration card, and two non-copy-protected game diskettes. *Bandit Kings* requires 1MB of RAM, and operates fine on all Amigas, including an Amiga 3000 run-

recruiting heroes, training soldiers, and feeding your constituents. The game operates on monthly turns in which you can choose from dozens of political, economic, and military options to expand your kingdom. From waging war against the evil Gao Qiu and his henchmen to hunting for your next



Bandit Kings of Ancient China.

ning AmigaDOS 2.0. The game is fully hard-disk installable, with installation as simple as dragging the game drawers and icons from the original diskettes to the hard disk.

In *Bandit Kings*, you and up to six other human players play the role of an exiled "good fellow"—something like a cross between Robin Hood and Genghis Khan—in one of four scenarios set in early 12th-century China. Your goal is to marshal enough men and material to challenge the evil Gao Qui, a Chinese Sheriff of Nottingham who has unlawfully seized control of this fragmented Asian kingdom and is thwarting the wishes of the rightful emperor. While the plot is nothing unique, Koei's execution is definitely a cut above the norm.

Starting the game as an exile, you must quickly begin settling territories,

meal, *Bandit Kings* gives the player an impressive list of options to control his budding kingdom. You can interact with 255 individual computer characters, each with his own statistics, personality, and portrait. The combat sequences are tailor-made for the wargaming crowd, with a hex-based combat system, which incorporates everything from weather conditions and terrain features to launching fireballs and calling reinforcements from surrounding territories.

Bandit Kings fully supports the Amiga's interface, with all sorts of buttons, windows and gadgets to click, drag, or toggle. It also peacefully multitasks with other Amiga applications, allowing you to conquer China while you simultaneously grapple with less heroic real-world ordeals, such as balancing the checkbook. Graphics,

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sound, and animation are nothing exceptional although entirely acceptable. The documentation is excellent, including strategy hints and a discussion of the novel upon which the game is based: the Shui Hu Zhuan, an epic 70-

chapter work of Chinese literature roughly similar to Homer's *Iliad* and *The Odyssey*.

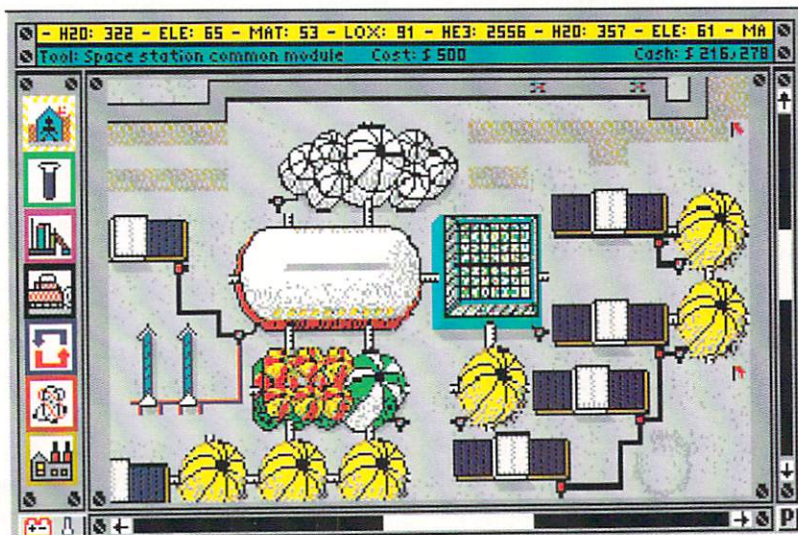
Bandit Kings has some rough spots, including an annoying tendency to redraw each one of the several dozen

territories several times every few minutes. Also, If you haven't managed to bring that nasty Gao Qiu to justice by 1127 AD, China is abruptly invaded by the northern barbarians and the game promptly ends. Regardless of how many troops, territories, heroes, or resources you have at your disposal, the game simply tells you that the kingdom is being invaded by barbarians, who rudely begin to conquer all of the territories on the map. Giving players a fighting chance to blunt the advance of the barbarians and continue the game would have been a much better playing option. In this instance, Koei's slogan "We supply the past, you make the history" rings a little hollow. Bandit Kings is also a tad on the expensive side, selling for a hefty \$59.95.

Nevertheless, Koei has a long track record of producing detailed, extremely playable wargames, and Bandit Kings doesn't disappoint. If you're looking for a richly presented, solidly constructed wargame to while away those long winter hours, Bandit Kings is just about as good as it gets.

MOONBASE

by Miguel Mulet



MOONBASE, by Merit Software, is similar to the game SimCity where you can spend hours trying to reach your goal. In this case you are building a Moonbase.

Government cutbacks have effected almost every government agency, especially NASA. Unfortunately, those cutbacks are particularly harmful to your operation. After all, it's hard to make a living on a piece of rock over 200,000 miles from Earth. If fusion ever becomes a viable energy source, you could always sell Helium 3 back home, as well as any other minerals you could mine on the moon. It'll be hard, though, to turn a profit when you have to constantly build and maintain new solar cells, thermal conduction units, and living quarters. All in a day's work—if you're the Commander of MOONBASE!

MOONBASE is brought to you by Wesson International, and KDT, a

company which has actually worked with NASA on plans for a real moonbase. As commander of the moonbase, you start out as its first and only inhabitant. NASA provides you with a starting budget for 10 years, after which you have to make it on your own. Your goal is to design a self-sustaining operation. How you accomplish this is left completely up to you.

The game starts by generating a lunar terrain. If you don't like the first one, you can start a new game which will generate a new landscape. After this, you must decide where to build living quarters, scientific laboratories, power generating equipment, and thermal conduction equipment. Cash-generating industries must also be started from scratch, and are based primarily on the mining of vital elements, at least on the moon: oxygen, water, and Helium 3. Once you have more capital and materials, you can also begin manufacturing products which can

be produced only in the reduced gravity of the moon. These products can be sold on Earth for a profit.

Placement of each object must be carefully planned, as the connections for thermal and electrical couplers are found only in a certain area for each structure. If you build things too closely together, you may not be able to supply either of these two essential commodities. Placement also becomes a problem if you are dealing with nuclear power. A meteor strike on the nuclear power plant could take a large section of your moonbase with it!

The game is controlled via the mouse and/or the keyboard. Pull-down menus at the top of the screen allow you to change game speed, load and save games, and view vital statistics of your colony. The goods you manufacture can be sold automatically, or if you are a wise investor, you can follow the supply and demand of these goods and sell them only when they'll bring in top

dollar. The other parameters you must follow include habitation space, as well as your yearly budget.

Game graphics and sound are fairly well done, with the use of digitized voices alerting you to problems on the base as they occur. The factories, power plants, and miners all have moving parts, and you can get an occasional glance of a lunar lander as it takes off or lands.

MOONBASE was developed on an Amiga 3000, and if you are using an Amiga 500 or 1000, it shows. As the base gets bigger, screen updates take a lot longer—up to 45 seconds or more—and increasing game speed doesn't help at all. This can get to be extremely frustrating, as these updates occur rather frequently and greatly limit what you can accomplish between their occurrences. The precise placement of structures is also somewhat tedious.

The manual is an 136-page novella, with instructions interspersed within

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its pages. The novella is fairly good, although I wish it would have had an ending, especially because you don't really pick up where the story left off. Thus, you don't know how things wind up. Unfortunately, with the instructions intermixed with the story, it is hard to read the technical portion of the manual. Luckily there are a few good appendices, along with a quick-start section at the back of the book, which will get you up and running fairly quickly. The other drawback to the manual is that it is written for the IBM PC, so that not everything applies to the Amiga.

Although MOONBASE has a few irritating deficiencies, I rather enjoyed playing it. Like SimCity, the game becomes addicting after a while. Building a thriving Moonbase is not easy, though, and you can spend many hours trying to accomplish just that. If you're interested in a different kind of simulation, take a look at MOONBASE. •AC•

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Jump Tables

In Modula-2

by *Michal Todorovic*

Most programmers like to find the “best” solution to a particular problem. Ideally, this fabled best solution produces the smallest executable, runs the fastest, and has the most readable source code of all the techniques available. However, in real life, such ideals are difficult to achieve. Usually, to obtain one of the three goals of speed, size, or readability, the programmer may have to compromise at least one of the other two.

Branching

How to branch to another part of a program quickly and efficiently is a universal problem of programming. One of the ways to accomplish this is with the IF statement:

```
IF condition THEN
  DoThis()
ELSE
  DoThat()
END;
```

If there are only two places the program can branch to, in this case to either DoThis() or DoThat(), then the IF statement is probably the most effective solution. However, there are times when more than two branches are needed. The resulting code from using the IF statement then might look like this:

```
IF condition = first THEN
  DoFirst()
ELSIF condition = second THEN
  DoSecond()
...
ELSIF condition = twentieth THEN
  DoTwentieth()
END;
```

This algorithm is a very sloppy solution to the problem. It may require up to 20 comparisons to do a branch, which can

slow down a program dramatically. It is also very fat; the IF and ELSIF statements consume a great deal of space. It is also one of the most unreadable pieces of code a programmer could write.

The CASE Statement

A better solution is to use the CASE statement.

```
CASE condition OF
  first      : DoFirst()      |
  second     : DoSecond()    |
...
  twentieth  : DoTwentieth() |
END;
```

Depending on the efficiency of the compiler, that is, how it generates code for a CASE statement, then using the CASE statement is faster, and produces smaller code than our previous IF, ELSIF algorithm. It is also more readable. However, there is a better way.

The Jump Table

Assembly language programmers for years have been using what are known as “jump tables.” For every condition, they provide a number. This number is then used as an offset

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into a jump table, which contains the address of the subroutine to jump to. The time necessary to do any of the branches are constant; all they require is an addition operation, then a JSR (jump to subroutine) command. The resulting executable is very compact. The jump tables can also be modified during run-time; this is one of the proper ways to write self-modifying code.

It is possible to write jump tables in Modula-2 as well. An array is substituted for the jump table, procedure types are substituted for the jump table values, and a variable is substituted for the offset. Right now, some of you may be saying wondering, so I'll explain the key concepts.

Procedure Types

In Modula-2 there are a couple of ways to do a procedure call. The way all of you are familiar with is to do the procedure call directly. However, Modula-2 also allows the programmer to assign a procedure to a variable. Let's create a TYPE that can store a PROCEDURE call:

```
TYPE
  ProcType = PROCEDURE();

VAR
  VarDoFirst : ProcType;
```

ProcType is known as a Procedure Type (in C-speak, a pointer to a function); ProcType is a TYPE that holds a procedure call. VarDoFirst is a variable declared as ProcType.

Let's declare a PROCEDURE:

```
PROCEDURE DoFirst();
BEGIN
  DoThis();
  DoThat();
END DoFirst;
```

We have defined the PROCEDURE DoFirst. Now, at some point in the program, we can write this:

```
VarDoFirst := DoFirst;
VarDoFirst();
```

These two lines will accomplish the same thing as:

```
DoFirst();
```

The programmer can specify that parameters need to be passed to the procedure type:

```
TYPE
  ParamFun = PROCEDURE(CARDINAL);
```

Any variable of TYPE ParamFun could only accept a PROCEDURE that has a CARDINAL passed to it as a parameter.

One can specify that the procedure type requires different parameters passed to it:

```
TYPE
  MulParamFun = PROCEDURE(CARDINAL, ADDRESS, INTEGER);
```

One can also specify that the procedure type returns something:

```
TYPE
  RetParamFun = PROCEDURE(CARDINAL) : ADDRESS;
```

As you can see, the PROCEDURE type can be shaped into pretty much an arbitrary form.

Jump Tables in M2

We now can now implement jump tables in Modula-2. Let's redo our example of the CASE statement using jump tables. First of all, we would need an ARRAY of ProcType:

```
VAR
  DoCondition
    : ARRAY[CARDINAL(first)..CARDINAL(twentieth)]
    OF ProcType;
```

Next, we have to initialize the ARRAY DoCondition.


```

PROCEDURE InitCondition();
BEGIN
  DoCondition[CARDINAL(first)] := DoFirst;
  DoCondition[CARDINAL(second)] := DoSecond;
  ...
  DoCondition[CARDINAL(twentieth)] := DoTwentieth;
END;

```

We can now replace the CASE statements with the following line:

```
DoCondition[CARDINAL(condition)]();
```

One might also add some error checking here:

```

IF (condition >= first) AND (condition <= twentieth)
THEN
  DoCondition[CARDINAL(condition)]()
ELSE
  (* Error condition *)
END;

```

Without error checking, if condition is not between first and twentieth (the only conditions we defined in InitCondition()), we will get quite a spectacular crash as the program attempts to branch to a non-existent subroutine.

The Pay Off

What do we gain by using jump tables? First of all, with enough elements, this method produces executables that are much faster than the CASE statement. The CASE statement will take progressively longer to execute as the number of elements within it increases. Jump tables always take a constant amount of time to execute, no matter how many elements they contain. With enough elements, jump tables produce smaller executables. The code is also more readable than a big long CASE statement.

What's the down side? It isn't always profitable to use the jump table. In the previous example, we knew that condition would be between first and twentieth (CARDINAL value of 0 and 19). So our ARRAY would only be a few bytes long. However, in many cases the variable might vary between, say, 0 and 65000. This would require an array of hundreds of kilobytes to handle. In the latter situation, a CASE statement might be better if many differing conditions produce the same result. One could get around this problem by having a routine that comes up with the offset, thus requiring a smaller jump table. Although this would slow the jump table down a bit, it would still probably be much faster than the CASE statement.

What Do I Do with It?

Now we know how to create jump tables. What is one to do with them? I'll give a couple of examples.

An interpreter is much easier to implement if one uses jump tables. Everyone has seen the tokenized basic source from the AmigaBASIC interpreter. What the interpreter has

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done is convert keywords—like IF, WHILE, REPEAT, etc.—into a number (the token) in the source. This token is then used as an offset into their jump table. The programmer then only has to write a processing routine for every keyword, and then call the jump table again recursively if necessary.

Jump tables would provide an effective solution for a program that processed command key strokes. The programmer would have to write a processing routine for each key stroke, and set up the jump table values.

Run time libraries on the Amiga are implemented as jump tables. If anyone has ever written, or looked at, stub routines for an Amiga library, then they know all they need is the offset from the library base, and they can JSR to any of the routines in the library.

Procedure Types are a tool that can help a programmer achieve the "best" solution to a problem. In the case of the jump table, Procedure Types gave us the means to arrive at a solution that was extremely fast, produced a small executable, and had the most readable source code of any of the available solutions.

•AC•

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"APL and The Amiga: Primitive Functions and Their Execution", by Henry T. Lippert

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"Mimetics' FrameBuffer", review by Lonnie Watson
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"Making A Name For Yourself", Creating logos on the Amiga, by Frank McMahon

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"Forensic Animation", the Amiga helps out in the courtroom, by Andrew Lichtman

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"Ultrasonic Ranging System", the sonar system project continues by John Iovine
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"DCTV", manipulate millions of colors, by Frank McMahon
"Lauren in Disguise", workaround to DeluxePaint III's lack of HAM support, by Merrill Callaway
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Plus, a special feature on Graphic Word Processors

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"The Big Three in DTP," A desktop publishing overview by Richard Mataka
"The Amiga Desktop Publisher's Guide to Service Bureaus", by John Steiner
"M.A.S.T.'s Parallel Port SCSI Adapter," An inexpensive way to attach a hard disk to your A500 by Dan Michaelson
"All in One," programs for the beginner by Kim Schaffer

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"MaxiPlan Plus", a review by Chuck Raudonis
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"Professional Page 2.0," DTP review by Rick Broida

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"Firecracker 24", the 24-bit video board, by Frank McMahon
"Proper Grammar", a review of a comprehensive spell and grammar checker by Paul Larivee
"PageStream", another entry in the word processing/desktop publishing software line, by John Steiner
Also, extensive Summer CES coverage!

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"AlterImage", create titling and special effects for your home videos and desktop publishing, by Frank McMahon
"The Jerry Bryant Show", AC interviews Jerry Bryant whose secret weapons for producing four hours of television a week are the Amiga and the Video Toaster
"Understanding Genlocks", What is a genlock? Which one is best? The answers and more, by Matt Drabick
"Super 8 Meets the Amiga", easy film-to-video transfer with the addition of Amiga graphics, by Patrik Beck
"Looking Good with B.A.D.", a review by Rick Manasa
More extensive coverage of the Summer CES in Chicago!

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Plus: Education/back to school reviews and articles

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Updates from Fred Fish disks #521-#530

A68K v2.71, a 68000 assembler, can be found on Fred Fish Disk #521 and is an update to version 2.61 on Fred Fish Disk #314. *Author: Charlie Gibb*

K1 v5.1, an editor for the Kawai K1-II synthesiser, can be found on Fred Fish Disk #521 and is an update to version 4.8 on Fred Fish Disk #481. *Author: Andreas Jung*

Conquest v1.5, a war game similar to Risk, can be found on Fred Fish Disk #523 and is an update to version 1.3 on Fred Fish Disk #459. This is shareware.
Author: Michael Bryant

Snap v1.62, a text and graphics clipping tool, can be found on Fred Fish Disk #524 and is an update to version 1.4 on Fred Fish Disk #326. *Author: Mikael Karlsson*

DataEasy v1.3, a database program, can be found on Fred Fish Disk #526 and is an update to version 1.1 on Fred Fish Disk #417. *Author: J. Dale Holt*

Lister v1.01, a CLI program to display file information for archives, can be found on Fred Fish Disk #527 and is an update to version 1.0 on Fred Fish Disk 518.
Authors: Kerry Cianos and Geoffrey Faivre-Malloy

ToolManager v1.4, a program to add programs to the Tools menu (Workbench 2.0), can be found on Fred Fish Disk #527 and is an update to version 1.3 on Fred Fish Disk #476. *Author: Stefan Backer*

Zoo v2.10, a file archive program, can be found on Fred Fish Disk #527 and is an update to version 2.00 on Fred Fish Disk #164.
Author: Rahul Dhesi, Amiga port by Brian Waters

AmiOmega v1.5, a game similar to Hack or Rogue, can be found on Fred Fish Disk #528 and is an update to version 1.0 on Fred Fish Disk #320. *Author: Laurence Brothers, Amiga port by Klavs Pedersen*

KeyMenu v1.05, a program to select menus via the keyboard, can be found on Fred Fish Disk #528 and is an update to version 1.03 on Fred Fish Disk #470.
Author: Ken Lowther

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ClockDJ v5.20, a utility package including a clock, mouse accelerator, and a screen blanker, can be found on Fred Fish Disk #529 and is an update to version 4.07 on Fred Fish Disk #293. *Author: David Jenkins*

DMe v1.45, a text editor, can be found on Fred Fish Disk #530 and is an update to version 1.42 on Fred Fish Disk #441. *Author: Matt Dillon*

TurboTitle v.80, a program to help subtitle Japanese animation films, can be found on Fred Fish Disk #530 and is an update to version .71 on Fred Fish Disk #424. This is shareware. *Author: Robert Jenks*

•AC•

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The Fred Fish Collection

Below is a listing of the latest additions to the Fred Fish Collection. This expanding library of freely redistributable software is the work of Amiga pioneer and award-winning software anthologist, Fred Fish. For a complete list of all AC, AMICUS, and Fred Fish Disks, cataloged and cross-referenced for your convenience, please consult the current **AC's Guide To The Commodore Amiga** available at your local Amazing Dealer.

FredFishDisk500	Signal	Two programs designed to make it easy to write shell scripts that must be synchronized with the operation of another, in order to avoid disk thrashing for example. Includes source. Author: Davide Cervone
iWindows		A program that allows you to use the title of a window to specify the screen on which the window will appear. This provides a method of opening CON and RAW windows on screens other than the WorkBench, for example. Includes source. Author: Davide Cervone
wiconly		A program, and number of companion utilities, that allow you to copy windows on any screen, including custom screens. Iconified windows become small icons on the bottom of the screen, and they can be opened again by double-clicking them. Also allows any screen to become a shared, WorkBench-like screen, and gives you the ability to create newscreens specifically for this purpose. Each window can have its own custom icon. There is a programmer's interface to allow programs to control their own icons. Version 3.3, includes source. Author: Davide Cervone
FredFishDisk501	AddMenu	A program to add infinite number of menus to the Tools menu on WorkBench V2.0. Uses the correct WorkBench library calls and allows updating from CLI or from within the menu itself, meaning infinite number of functions. Binary only but source available from author. Author: Nic Wilson
AutoCLI		A PoCoCL type replacement that works with WorkBench 2.0 and fully compatible with A3000+ accelerator boards. Always retains the default path and stack, and current directory. Can automatically open CLI/SH/EL windows 1 pixel less than screen size on opening. Other features include an optional Function-keypress with the qualifier to execute an S-script file. Version 1.99d, binary only. Update to version disk 424 with more enhancements. Author: Nic Wilson
Dommos		The standard game of dommos with 6-6 set. The computer will provide quite a challenge to any skilled player. Version 1.0, includes source in Basic. Author: Russell Mason
DOSWatch		Monitor for calls to AmigaDOS via DOS. Needs Kickstart 1.2 or 1.3. This is version 1.0. HiSoft Devpac Assembler V1.21 source included. Author: A. Voss Wrede
Genesis		Uniquely flexible and powerful program for generating and rendering fractal landscapes. Original algorithms allow incorporating fractal rivers as integral parts of the landscapes, with natural looking river valleys, gullies, waterfalls, and lakes. A number of parameters can be varied to modify the landscape construction process and change the character of the final landscape. There is also great flexibility in the rendering. This is a demo version of the commercial product by the same name available from MicroIllusions and has some features disabled. Binary only. Author: James M. Bardeen
LList		A list type program that displays type of file. Many types of files included, and ability to extract information from other file types for recognition. Standard Amiga Wildcards supported. Binary only. Author: Nic Wilson
NewList		Powerful LIST replacement. Supports many features including: sorts, character filters, case sensitivity, most options offered by LIST, date construction, UNIX wildcards, and much more. Sort routines are very fast and memory usage is minimal. Version 5.0, an update to version 4.9 on disk 478. Binary only. Author: Phil Dietz
NoClick		A program to stop clicking in KickStart V2.0. Uses the correct method. Also included a patch for the KickStart utilities for a permanent no-click for V1.3 and V2.0, both A3000 version and KickStart version for other Amigas. Binary only and ASCII patch. Author: Nic Wilson
NoErrors		As simple to use, Gadget driven program. Its main function is to hide physical hard errors from floppy disks or hard disks, so these disks can then be used without DOS showing read/write errors. Binary only. Author: Nic Wilson
FredFishDisk502	AutoRev	A little utility to make it easy to update program headers ran from the CLI. Requires AmigaDOS 2.0. This is Version 1.1r. Source included. Author: Jan van den Baard
CELLS		A cellular automata experimental tool, based on the rules described in the Computer Recreation column of the Scientific American, January 1990. Version 1.3 Source included. Author: Davide Cervone
ElernaRome		A historical strategy game, that in spite of its high complexity is fast and easy to play. Fully movable controlled with a line zoomable map of the Roman Empire (overcast and intercasted options). The simulation of various historical events because of its accuracy (may be used for educational purposes) and is a challenging and entertaining game for two or more players (also interesting for single player). Version 1.0 (Italy). Binary only. Author: Sven Hartupf
ReturnCode		Two Short programs (LogRC and GetRC) to allow the "Return Code" left by a previous program to be saved in a format suitable for further (script) testing. GetRC allows the Return Code to be set or viewed as desired. Assembly source included. Author: Jim Butterfield
SynInfo		A program which reports interesting information about the configuration of your machine, including some speed comparisons with other configurations, versions of the OS software, etc. Version 2.22, an update to version 1.98 on disk 433. Binary only. Author: Nic Wilson
TrackDOS		A program that allows easy transfer of data between DOS, memory and trackdisk device. DOS means the data contained within a file, memory means the data contained anywhere within the memory map and trackdisk device means data stored on a disk not accessible with DOS (e.g. bootblocks special area disks etc.). The transfer of data between these three areas is not normally easy or convenient. TrackDOS was written to overcome this. This is version 1.08, an update to 1.04 on Fish disk 365. Binary only. Author: Nic Wilson
FredFishDisk503	NoFragLib	Library containing 6 routines for defragmenting memory. Extracted and updated from the "tool" library on disk 475. Includes source. Author: Jan van den Baard
PCQ		A freely redistributable, self-compiling, Pascal compiler for the Amiga. This is version 1.2a, an update to version 1.1 on disk 335. It has many enhancements and improvements. This is bundled with the latest version of AMK assembler, Blink linker, Debug, and Mondo give a complete development environment. Includes the compiler source and example programs. Author: Patrick Quaid
FredFishDisk504	PolySilCon	Centralized Shell Command Interface with visible scrollable History and mouse access. Allows multiple shells to be controlled from a single command history window. Commands can be re-executed with a mouse click. A group of commands for a project may be loaded into the history from a file for easy access. Compatible with both 1.3 and 2.0. AmigaDOS, ShareWare, binary only. Author: Pete Goodvee
RoadRoute		A program that determines from a user modifiable data base, the shortest and fastest routes between two cities. Includes a coarse and a detailed data set and a program, RoadScan, for examining the contents of large RoadRoute data files. This is version 1.7. Includes source. Author: Jim Butterfield
ShuttleCook		Yet another animation from Eric Schwartz. Eric wanted to see if he could still do an animation that required less than 1 MB of turn. Released May 1991. Author: Eric Schwartz
View		Atedisplayer with many controls and features including searches, file requests, jump to editor etc. This is version 1.0, are write that requires AmigaDOS 2.0. Source is included. Author: Jan Van Den Baard
ViewDir		Allows reading the current directory by commanding "VIEWDIR". Displays a listing of the specified directory with the total bytes at the bottom and the description of the file types next to each file. Also includes a "version string" to allow DOS 2.0 VERSION command to read. This is version 2.1, an update to the version disk 358. Assembler source included. Author: Jim Butterfield
FredFishDisk505	TheDatingGame	A very well done animation by Eric Schwartz. This is Eric's biggest animation project to date. The animation lasts nearly 4 minutes and requires 3 MB of RAM to run. Flip the Frog has a kind of trouble getting to the house of his girlfriend, Clarissa Cat. This cartoon animation follows the style of the short theatrical cartoons of earlier days. The animation unpacks to two floppies. ShareWare. Author: Eric Schwartz
NGTC		Release Two of a trivia game based on "Star Trek: The Next Generation" TV series. Part 1 is on this disk. Part 2 is on disk 507. You also need Release One from disks 404 and 405. Created with The Director Version 2. Binary only. Author: Gregory Epley
FredFishDisk507	LHCCon	A program that will convert Arc and Zoo formatted archives to LHC format. This will save precious disk space. LHC will do single files or entire directories. It also has the capability to preserve the comment field of the file for BBS programs that require it and for the individuals who label their programs in that manner. Version 1.01. Binary only. Author: Steve Robinson and Bill Hull
NGTC		Release Two of a trivia game based on "Star Trek: The Next Generation" TV series. Part 2 is on this disk. Part 1 is on disk 506. You also need Release One from disks 404 and 405. Created with The Director Version 2. Binary only. Author: Gregory Epley
FredFishDisk508	DirWork	A fast, simple, efficient, shareware DirUtility that gets directories off floppies in about half the normal time. Configurable options and buttons, as well as all the usual features. This is Version 1.30, an update to version 1.12 on disk 406. ShareWare. Binary only. Author: Chris Hames
HCC		Amiga port of Soccob, Limited's C Compiler, version 2.0. Can compile complete itself, supports 32 bit ints, and optimizer can registerize variables. Includes compiler, optimizer, tool for creating interface code for Amiga system calls, startup code, CLibrary, include files, and library routines that work with Motorola FPP format. Uses assembler A68k linker BLK, and provides run-time shared CLibrary. C/C++ library, includes source. Author: Soccob Limited. Amiga port, bug fixes and enhancements by Detlef Wuerkner
FredFishDisk509	Multi_Player	A music player that loads and plays a large variety of the "tracker" type sound modules. With an intuition interface, allows you to load formats like Intuitracker, NoisePlayer, Soundtracker, Future Composer and others including power-packed modules. Includes many sample modules in several of these formats. This is version 1.2. Includes source. Author: Thomas Landrup
PCKeyMap		This program uses an Input/EventHandler to manipulate the backslash (\) and some other useful keys in order to better emulate an XT AT keyboard on the German Amiga keyboard (which is missing the backslash and some other keys). This is version 1.0. Includes source. Author: Peter Vorwerk
FredFishDisk510	ATCopy	A program to copy files from the Amiga side of a system equipped with a PC AT or equivalent to the PC side, using wildcards. Copies directly through the shared memory. Supports CLI and WorkBench usage. This is version 2.22, an update to version 2.2 on disk 458. With some final bug fixes, this will be the last non-commercial release. ShareWare, binary only. Author: Peter Vorwerk
SYNWORKS		A graphics oriented environment for design, training and test of neural networks. The enclosed version is public domain and supports only three network models. Not all options are available but this version provides the most important features to allow users to decide if neural networks are an appropriate solution for their problems. Binary only. Author: Michael Kaiser
VMK		A virus detector, this program no longer detects specific virus, instead it concentrates on checking system vectors and various parameters that typically modify in order to survive reboots. This is version 1.0, an update to version 27 on disk 328 listed under "Hames". Binary only. Author: Chris Hames
FredFishDisk511	Connex	A "connect-4" type game. This is version 4.0, an update to version 3.8 on disk 493. ShareWare, binary only. Author: Adrian Millett
DirWork		A fast, simple, efficient, shareware DirUtility that gets directories off floppies in about half the normal time. Configurable options and buttons, as well as all the usual features. This is Version 1.31, an update to version 1.30 on disk 508. ShareWare. Binary only. Author: Chris Hames
Less		A text file reader, descended from Unix "Less". "Less" has features found on neither Amiga file readers: it can use pipes, accepts multiple file names, and has many convenient positioning commands for forward and backward movement, marking positions, etc. This version runs on Amiga, under any screen resolution and under the full 8-bit character set. Other improvements include searches using regular expressions, multiple file selection from Workbench, and resident operation. This is version 1.42, an update to version 1.30 on disk 149. Includes source. Author: Ray Zaring et al.
OneKey		A 1:3:2 compatible input handler for people who can only press (or cause to be pressed) one keyboard key at a time. OneKey gathers individually pressed qualifier keys (shift, alt, ctrl, etc.) and then applies them to the next non-qualifier key that is pressed. This is version 36.11, includes source. Author: Carolyn Schaeffer
PCQ		An update to PCQ from FredFishDisk 503. This is only a partial distribution and includes just the compiler main pass, the documentation, and a ReadMe file. You need the distribution from FredFishDisk 503 to use this material. This update is version 1.2b. Author: Patrick Quaid
Solitaire		A shareware solitaire game, known widely as Klondike. The rules can be varied, and there are five different ways of working through the deck. Also includes a palette request to fine tune the colors you like and a save-setup function that remembers how all the options are set. This is version 1.8, binary only. Author: Gaylan Wallis
FredFishDisk512	Csh	Replacement for the Amiga shell, similar to UNIX csh. Main features include over 100 builtin commands, 70 functions, new system variables, file name completion, freely programmable command line editing, file classes, auto cd, lazy cd, intuition menus for the shell window, automatic RX-ing, local variables, \$!, statement blocks, high speed, plus much more. This is version 5.15, an update to version 4.02 on disk 458. Includes source. Author: U. Dominik Mueller, C. Boreo, S. Drew, M. Dillon
FlipIt		Possibly the strangest Revers/Othello type game available. ShareWare, binary only. Author: Adrian Millett
M2Pascal		A simple Modula-2 to Pascal translator. You can write simple programs on an Amiga using one of the available Modula-2 compilers, and then use this translator to generate Pascal source code for port to other systems with Pascal compilers. Version 1.0, includes source in Modula-2. Author: Greg Mumm
Solitaire		Yet another solitaire game. Nicely done with good graphics and sound. ShareWare. Author: Pat Clark
FredFishDisk513	DKBTrace	A freely distributable raytrace program that takes a text description of a 3D scene and renders it to a 24-bit file which may be converted to HAM or viewed on an 24-bit card. The program features sophisticated textures, constructive solid geometry, and various graphics primitives such as quadrics (cones, cylinders, etc.), spheres, planes, triangles, smooth triangles and quads (donuts, etc.). Also included are many sample data files and many utilities for creating new data files and for post-processing the output files. Source and executables are included. Because of its size, the distribution has been split onto two disks. Disk 513 contains the raytracer and disk 514 contains the utilities. This is version 2.12, an update to version 2.0 on disk 397. Author: David Buck
NewList		Powerful LIST command. Supports many features including sorts, character filters, case sensitivity, most options offered by LIST, date construction, UNIX wildcards, and much more. Sort routines are very fast and memory usage is minimal. Version 5.0a, an update to version 5.0 on disk 501. New features include recursion, hunt mode, custom formatting, multiple paths, paging, and much more. Binary only. Author: Phil Dietz
FredFishDisk514	DKBTrace	A freely distributable raytrace program that takes a text description of a 3D scene and renders it to a 24-bit file which may be converted to HAM or viewed on an 24-bit card. The program features sophisticated textures, constructive solid geometry, and various graphics primitives such as quadrics (cones, cylinders, etc.), spheres, planes, triangles, smooth triangles and quads (donuts, etc.). Also included are many sample data files and many utilities for creating new data files and for post-processing the output files. Source and executables are included. Because of its size, the distribution has been split onto two disks. Disk 513 contains the raytracer and disk 514 contains the utilities. This is version 2.12, an update to version 2.0 on disk 397. Author: David Buck
GearCalc		A highly accurate gear calculator. Version 2.0, binary only. Author: Ed Bacon
S220toSVK		Converts sound samples from a Roland S-220 to S-VK 100 to SVXIFF 8-bit samples. This is version 1.4, an update to version 1.0 on disk 286. New features include volume-adjust and start-end-point setting. Includes source in assembler. Author: Dieter Bruns
TLog		An intuition based program that records statistics to monitor athletic training progress. Maintains a daily record of distance, time, heart rate, weight and temperature. Links a text file with the record for a free form diary. The APEX commands provide the basis for generating custom reports from the data base. Sample script allows TLog to automatically get a scheduler to post reminders of upcoming events. Version 1.0, shareware binary only. Author: Ed Bacon
FredFishDisk515	CheckBook	CheckBook Accountant is a checkbook recording, balancing, budgeting, and analyzing program. Intended to be used as a companion to a checkbook register and not as a replacement, this program offers a simple way of balancing check-books, tracking bank transactions, and recording and analyzing budgeted transactions. This is version 2.0, an update to version 3.0 on disk 425. Some of the new features include: Sort, Move, Duplicate, Program Prefixes, Recurring Transaction Groups, Statistics, and Search & Replace. AmigaDOS 1.3 or Release 2 required. Binary only. Author: Jeffrey R. Almasol
D110EdDemo		Demo version of an editor for Roland D-110. Bulk dumps available. Edited parameters are not submitted to Roland D-110. Author: Dieter Bruns
PP		Powerpacker patcher is a small tool that patches the DOS library so that PowerPacker data files will still act as if they were "normal" files. Sample use of PP would be to crunch any of your files. It will still retain their functionality as long as PP is installed, and WB will never know the difference. Icons are useful, but take up a lot of valuable disk space. You may also use any text viewer or editor you desire directly on PowerPacker files. Version 1.0, shareware, includes source. Author: Michael Berg
SeiCOPTS		Lets you easily deal with the MANX COOPTS environment variable. You can set settings to Disk. Has a complete intuition interface. This is version 1.00, binary only. Author: Stephan Florber
FredFishDisk516	Enigma	An interactive animation object that can be viewed as a puzzle or a game object. The Enigma Machine can be programmed by the user to generate text. Part of the challenge is to discover how to program to generate meaningful output. Version 1.00, binary only. Author: Martin C. Kees
Loom		Simulation of an aetherharness loom. Supports 15 colors for warp and weft threads. Scalable display. Patterns created can be printed in draft format or saved as IFF files. Version 1.00, binary only. Author: Martin C. Kees
PhoneGram		Generates text from phone numbers. Attempts to find all three and four letter words encoded by any phone number. Graphic keypad display with sound. Version 1.01, binary only. Author: Martin C. Kees
Quotes		Quotes is a pseudo-random quote generator. It will scan a specified file of quotes, pick one at random, and display it. Great for status sequences. CLI only. Version 1.0, includes source. Author: Adam Evans
RexViewMonitors		Messages sent to the REXX port. Messages are described by task, action code and modifiers, and the contents of arguments to the REXX port. CLI utility to monitor the REXX IPC buffer for Rexx programmers and interfaces. Version 1.01, includes JForth source. Author: Martin C. Kees
Xi		Demo version of a single-bit plane cel animation generator. Uses an onion-skin display to rough in an animation sequence. Has a large AReX command set, multiple precision bezier curves and splines, scalable and rotatable polygons, brush and pencil tools, fill, turtle graphics and macrokey definitions. Requires library (F. Dawson). Non-saving demo version, binary only. Author: Martin C. Kees
Aeqopt		A program that renders multicolor pictures using an algorithm based on electrostatic effects. Renders in low-res, in high-res, and into speed quality modes. Includes both PAL and NTSC versions, English and German docs. This is version 1.15, an update to version 1.36 on disk 474. New supports saving pictures in IFF-ILBM format and animation rendering via script files. Freeware, includes source in PCQ. Author: Juergen Matern
AmBack		Demo version of a new backup utility. Features include backup to any AmigaDOS compatible device (such as floppies, removable hard disks, fixed media hard disk, and tape drives), no copy protection configurations, complete backups, incremental backups, selective backups, file exclusion filter, setting of archive bit, etc. Demo version does not have restore, compare, or scheduler. Version 1.04, an update to version 1.03 on disk 493. Binary only. Author: MoonLighter Software
CWToy		A program like Say or Speech Toy that allows your Amiga to communicate in International Morse Code. A lot of nice features for code practice or with a simple hardware interface even useful as a keyboard program for your transmitter. Version 1.04, includes source in C. Author: Rob Frohe
Hex		A file-based binary file editor with lots of features. Version 1.0, shareware, binary only. Author: Nicola Salmona
RussianFonts		Russian Fonts ranging from 13 points to 31 points. Author: Daniel Amor
Spiner		A spline screen blander commodity, derived from the spline code extracted from Tom Rokicki's Mackie and encapsulated into a standard AmigaDOS 2.0 commodity. Binary only. Author: Tom Rokicki, Sebastiano Vigna

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FredFishDisk518

AmiDisk is an Amiga version of the NeXT's Disk facility. It will open up a small window on your Workbench full of little icons. Each brush represents an application, like an icon, but it's a brush. Click on the brush and your application will start. This is version 1.3, an update to version 1.2.4 on disk 474. Shareware, binary only. Author: Gary Knight

Lister Program to display information about files in various types of archives, such as arc, zip, tar, zip, and zip. Version 1.0, includes source. Author: Kerry Ciano and Geoffrey Faivre-Malloy

Post An excellent PostScript interpreter for the Amiga which implements the full Adobe language. Supports type 1 and type 3 fonts, screen output, file output, and printer output. Requires ArLibray V39+ and ConMan V1.3+. This is version 1.6, an update to version 1.5 on disk 458. Includes source in C. Author: Adrian Klyward

FredFishDisk519

AVLSort A text file sort program, based on a general purpose AVL package by Mark Mallett (included). Handles as many lines as will fit in memory. Includes source. Author: Robert Pyron, Mark Mallett

ChkFrag A program that reports on the extent of file fragmentation in any specified directory tree. Binary only. Author: Timesus

FifoLib A FIFO library, but based on the library rather than the implementation. Fifo library is a general file library implementation that supports named fifos, writing to a fifo from a hardware exception, multiple readers on a fifo with each getting the same data stream, efficient reading, and automatic manual flow control. Programs that require non-blocking I/O can access one side of a FIFO, connection via the fifo library instead of the FIFO device. Version 3.1, an update to version 2.0 on disk 448. Includes source. Author: Matt Dillon

OakLisp A straight port of the OAKLISP system to the Amiga. OAKLISP is a Scheme-like LISP with an object-oriented base. An R3RS Scheme environment is included in the package. Because of its size, the distribution is made on two disks, 519 and 520. Both disks are required. Source is included. Author: Kevin Lang, Barak Pearlmutter, ported by Mike Meyer

Optimizer A disk optimizer that works on floppy disks, hard disks, and ramdisks. It is designed to provide safe optimization, moving only one block at a time. Version 1.0, freeware, binary only. Author: Tim Stoltmeyer

FredFishDisk520 IOBoard Full plans for a public domain hardware project which adds two parallel ports and two serial ports to an Amiga 500, 1000, or 2000, for less than \$100, with the capability to upgrade to four ports of each type at any time. Includes serial and parallel drivers with source code. Version 2.13, Author: Jeff Levin, Dan Babcock, Paul Coward

OakLisp

A straight port of the OAKLISP system to the Amiga. OAKLISP is a Scheme-like LISP with an object-oriented base. An R3RS Scheme environment is included in the package. Because of its size, the distribution is made on two disks, 519 and 520. Both disks are required. Source is included. Author: Kevin Lang, Barak Pearlmutter, ported by Mike Meyer

FredFishDisk521

A68k A 68000 assembler originally written in Modula 2 in 1985 and converted to C by Charlie Gibb in 1987. Has been converted to accept meta-asm compatible assembler source code and to generate Amiga objects. This is version 2.71, an update to version 2.61 on disk 314. Includes source. Author: Brian Anderson, C translation and Amiga work done by Charlie Gibb

BatchMaster

A program that makes creation of interactive command scripts a lot easier. It works as a command ASK, IF, and SKIP together, only better. You can have up to four options to skip to, and select them with a mouse. As BatchMaster has an intuitive interface. This is version 1.27. Requires arp library. Binary only. Author: Janni Pelkonen

CheckPt

A small program for checking the presence of a parallel printer from within a script file. Update of version on disk 479. Now also includes two small tools to test the state of some of the printer port, to make it easier to find the source of printer problems. Binary only. Author: Tom Kroeber

K1

An editor program for the Kawai K1 synthesizer. Includes a bank loader for single patches and multi-patches, a single-patch editor, a multi-patch editor, and support for the effect-session and K1 controllers. Version 5.1, an update to version 4.8 on disk 481. Binary only. Author: Andreas Jung

LandScape

A simple CAD program to aid in designing garden layouts. First the plan is laid out, placing lawns, paths, plants, etc., and the program then draws a 3D picture of what the garden might look like in real life, from any viewpoint. Version 1.0, binary only. Author: Steve Goddard

SynthSong

Asong created using the freely-distributable program MED V.3.0. Although quite small (63k) on disk, this one expands in memory once loaded, lasting almost 65 minutes. Player program included. Author: Alex Van Convent

StameT3E

Converts any text file to an executable. The resulting program will only have a minimum of bytes appended (94 bytes for hunk structure and display program). The text file is not limited by its size. Freeware, with source in C. Author: Gary Glendon

FredFishDisk522

MAK The Mandelbrot Adventure Kit is a nicely done mandelbrot generator with full source code (about 18,000 lines of C code). Includes some sample images along with the parameters used to generate them, and lots of built-in help screens. Author: Steven Dillon

FredFishDisk523

BMake A GNU Make subset. Includes pattern rules, conditionals, 'include', function calls, etc. This is Version 1.4, with source. Author: Ben Eng

Conquest

Loth of Conquest is a war game similar in concept to the board game Risk. You are the lord of an entire world, destined to rule the galaxy. Some worlds are virgin fruits, ready for you to colonize. Some worlds have natives who do not wish to accept your rule, these you must conquer for they will yield more valuable resources. As you claim the galaxy you will find you are not the only one extending your dominion. This is a two-player game, so be prepared to defend yourself and take what is yours! Version 1.5, an update to version 1.3 on disk 459. Binary only, shareware. Author: Michael Bryant

PSGraph

A graphing program with plot previews and encapsulated postscript output. Version 1.0, binary only. Author: Rick Golembewski

ScreenJaeger

A screen capture program that works by scanning through memory, allowing you to grab screenshots from programs that don't multitask, and save them as IFF files. Features include an intuitive interface, multiple bitplanes, support for all Amiga display modes and resolutions, CHIP and FAST memory, overscan, and both NTSC and PAL. This is version 1.0, includes full source. Author: Syd Bolton

SerLib

A shared library providing easy access to a serial device. Allows both synchronous and asynchronous access to the port. With support code for lattice, Manx and Oberon. Includes examples in both C and Oberon (with source) and docs in ASCII, DVI, and PostScript. Shareware. Author: Gary Glendon, Oberon interface by Frank Schumert

FredFishDisk524

Kamin Various interpreters from the book "Programming Languages: An Interpreter-Based Approach", by Samuel N. Kamin. This distribution includes lisp, apl, scheme, sasl, clu, prolog, and smalltalk interpreters, automatically translated from Pascal to C using p2c. Includes C and Pascal source. Author: Samuel Kamin

Snap

A tool for clipping text or graphics from the screen, using the clipboard device. Snap finds out character coordinates automatically, handles different fonts, keymaps, accented characters, and more. Version 1.62, an update to version 1.4 on disk 526. Includes source. Author: Mikael Karlsson

TAPDemo

TumbleAxis Processor is a Sculpt utility with several functions, including automatically aligning a path's tumble axis so that an object following that path will always take the direction of travel, and production of an easy-to-read data list containing the location of each node and the orientation of each of its tumble axes. This is a fully functional version except that it will not function on paths with more than 15 nodes. Binary only. Author: Martin Kosterin

FredFishDisk525

CrcLists Complete CRC check files for disks 401-520 using the brik program. These were made directly from my master disks. Along with the crc lists from disk 401, these lists will allow you to check all of the disks in the library to make sure they are correct and complete. Author: Fred Fish

DumpHarpoon

Program that dumps the DAT data files for the game HARPOON. Author: Mark Kyriakou

MinxDemo

Demo version of minx 1.5, an operating system very similar to UNIX. The full version of minx comes with source code for the kernel and most of the utilities. Binary only. Author: Andrew Tanenbaum, et al.

SIO

A small scheme interpreter (Scheme In One Defun) which can be used for calculations or included as a command interpreter or extension macro language in other applications. This is version 2.4. Includes source. Author: George Carrette

FredFishDisk526

DataEasy A nearly-to-use database program which includes a phone dialer, speech output, a simple screen editor for making and modifying the database definitions, a screen print function, form letter printing, sorting, searching, and two small sample databases. Version 1.3, an update to version 1.1 on disk 417. Binary only, source available from author. Author: J. Dale Holt

GNUPlot

An interactive function and data plotting program which supports a great number of output devices. Includes extensive on-line help. Version 2.0, patch level 2. Includes full source along with diff and patch programs to generate Amiga version. Author: Thomas Williams, Colin Kelley, Carsten Steger, Russell Lang, Dave Kotz, John Campbell

FredFishDisk527

Aiq Replaces the standard system requester with nice animated requesters which you can also attach different sounds to. Works under AmigaDOS 1.3 or 2.0 to give all the normal system requester a new look. Version 1.61, binary only. Author: Martin Laubach, Peter Wiecek, and Rene Heikel

Lister

Program to display information about files in various types of archives, such as arc, cpio, lha, tar, zip, and zip. Version 1.01, an update to FF518. Includes source. Author: Kerry Ciano and Geoffrey Faivre-Malloy

MightyMouse

A very small screen blaster, mouse accelerator, mouse blaster, hotkey, etc. utility. Version 1.05, binary only. Author: Bob Stouder

PicBase

A program that allows the user to organize and manage all IFF images and brushes stored on disk. Displays a miniature monochrome (8 or 16 level) image of each file, with information such as the full path name, the creation date, file size, image size and depth, display mode, and file type. The images are displayed four at a time and can be scrolled in real time, manually or automatically sorted, presented as a slideshow, and more. Version 0.36, shareware, binary only. Author: Mike Berro

SRegExp

A runtime library of routines for doing wildcard pattern matching and wildcard path matching. It accepts a slight extension to the AmigaDOS wildcard syntax, including a 'not' operator and character sets. This is version 11.1, includes source. Author: Jon Spencer

ToolManager

ToolManager is a full featured program to add programs (either Workbench or CLI) to the tools menu of the 2.x Workbench. Programs can be added by dragging their icons onto the ToolManager 'config' window or the optional ToolManager icon or by editing the config file. Requires Workbench 2.0. This is version 1.4, an update to version 1.3 on disk 476. Includes source. Author: Stefan Becker

Zoo

A file archiver, much like 'arc' in concept, but different in implementation and user interface details. Version 2.10, an update to FF164. New features include greatly improved

compression, preservation of full pathnames by default, and extended multi-screening. Binary only. Author: Rahul Desai. Amiga port by Brian Waters

FredFishDisk528

AmOmega Amiga port of the Omega game. Omega is similar to hack orrogue, but it's much more complex. There is a city, several towns, a wilderness, lots of dungeons, a multitude of monsters, lots of spells, magic items, etc. There are several quests to complete. All in all, it's an excellent game. This is version 1.5, a different port than version 1.0 on disk 320. Binary only. Author: Laurence Brothers

CpuBit

CpuBit replaces the system BitMap routine with a version that uses your 68020 68030 when it's worthwhile to do so. This results in text scrolling twice as fast as usual, and in addition, the color flicker effect normally present when scrolling multicolor text is removed. Version 1.0, includes source. Author: Eddy Carol

FontConv

Converts Macintosh Postscript type 1 and type 3 fonts to the IBM Postscript type 1 and type 3 format. Also converts Macintosh bitmap screen fonts to the Adobe binary format (afl). Version 1.2, binary only. Author: Gary Knight

KeyMenu

An alternative to Intuition's method of menu selection via the keyboard. Uses one key to activate the menu for the currently active window, the cursor keys to move through the menu as you choose, and the return key to select the desired menu item or escape key to abort selection. Works with AmigaDOS 2.0 mouse accelerator and has optional blank Intuition's pointer. Version 1.05, an update to version 1.03 on disk 470. Includes assembly source. Author: Ken Lowther

SimSmart

A general purpose utility that prints the program source code of almost any language, so that (for example) the keywords are embedded and underlined, and the comments are italicized. These features are adjustable by the user, to suit individual taste. Topi also is adjustable, to harmonize with the shading depth of a particular program. Output may be either on the printer, the screen, or to another file. SimSmart may easily be extended by the user to deal with extra languages. Version 2.10, shareware, binary only. Author: David Simon

FredFishDisk529

ClockDU A utility which combines a clock, mouse accelerator, screen blaster, window manipulator, function keys, and macros into a single program, written in assembly language for maximum efficiency. Includes an ArExec port. Version 5.02, an update to version 4.07 on disk 293. Binary only. Author: David Jenkins

TownMaze

A program that designs a town-shaped maze like the town 'Bird's Tale' uses. Version 1.2, includes source. Author: Kent Paul Dolan

FredFishDisk530

DeckBrowser A freely redistributable player for unbundled Cando decks. Version 1.5, binary only. Author: NOVAtronics

Dme

Version 1.45 of Matt's text editor. Dme is a simple WYSIWYG editor designed for programmers. It is not a WYSIWYG word processor. It has a number of additional features, including arbitrary key mapping, fast scrolling, line line statistics multiple windows, and ability to copy windows. Update to version 1.42 on disk number 441, includes source. Author: Matt Dillon

TurboTitle

A program created for the purpose of substituting Japanese animation films and to create a standard Amiga subtitle format. Is perfectly suited for substituting any foreign film. Version 0.80, an update to version 0.71 on disk 424. Shareware, binary only. Author: Robert Jenks

FredFishDisk531

CaligraDemo Demo version of Caligra 2.0 from Octree Software. Requires a 68020 68030 and a 68881 68882. Binary only. Author: Octree Software

DisDF

Program to disable DF0-DF3 to stop that empty drive clicking by putting the trackdisk devices into a removed state. Can be run from CLI, startup script or WB. Command line options select drives and also remove the File System tasks to reduce CPU load a little more. Version 1.0, includes source. Author: Patrick F. Mistell

FileSearch

This program will search an AmigaDOS volume for a specified file, using a filename pattern. Useful for hard drive owners wanting to find a file program quickly. AmigaDOS wildcards are supported. 'Wildcards are: * wildcard, ? wildcard, [] wildcard. Version 1.5, binary only. WBS 2.0 only. Author: Matt Croft

Graffiti

Demo version of an art program, with a feature set somewhat less than Paint but more than many other such programs. Has a few special functions including like autoscrolling, converting screens to other resolutions, changing RGB values of the whole screen, fast autoscrolling magnifier and many others. Version 1.01, binary only. Author: Marcus Schiesler

PopulusKeys

Code words and operations descriptions for all 495 words of Populus (TM Electronic Arts and Bullfrog Productions). All information was obtained by the author's extensive playing of Populus. Author: Kenneth Fuchs

FredFishDisk532

BootPic BootPic allows you to install nearly any IFF picture that you like in place of the Workbench hand that appears after a reset. Version 1.1, an update to version 1.0 on disk 484. Now includes an Intuition interface. Binary only. Author: Andreas Ackermann

DataPlot

A program that plots data and algebraic functions in 2D. The user simply clicks on an option screen to select various options, such as type of marker, log or linear axis, axes manual scaling, grid lines. The macro language makes simple, repetitive plots easy to do. Data points can be transformed by an algebraic function prior to plotting. A macro can be automatically invoked upon startup. Plots in any resolution from 320x200 to 640x400. Plots can be saved as macro commands and IFF ILM files. Prints directly to Epson compatible printers, or any Preferences supported graphics printer via the PLT device. This is version 2.1, a significant upgrade to version 1.0 on disk 121. Shareware, binary only. Author: Dale Holt

SCSImounter

An interactive, fully automatic partition mounter especially suited for removable media SCSi drives. SCSImounter automatically scans the Rigid Disk Block of the drives and presents the user with a partition selector which allows the individual selection of the partitions to mount. Requires Kickstart 2.0. Binary only. Author: Martin A. Blatter

SCSIPrefs A Preferences editor for the battery backed up memory in the Amiga 3000. This small program allows you to change the bits that control some parameters of the embedded SCSI host adaptor. Requires Kickstart 2.0. Binary only. Author: Martin A. Blatter

TrainerMaker A program that allows you to modify money, number of lives, or high scores of some games. The game to be modified must be capable of multitasking. Version 8, binary only. Author: Andreas Ackermann

FredFishDisk533 BootGen This program creates a boot menu. You simply enter the name of ten programs and the program will do the rest. When you boot the disk a menu will appear where you can choose one of ten program names, which automatically will be loaded. Version 3.4, binary only. Author: Frank Enderle

Conquest A board game. Conquest is a game in concept to the board game Risk. You are the lord of an entire world, destined to rule the galaxy. Some worlds are virgin fruits, ready for you to colonize. Some worlds have natives who do not wish to accept your rule, these you must conquer for they will yield more valuable resources. As you claim the galaxy you will find, you are not the only one extending your dominion. This is a two-player game, so be prepared to defend yourself and take what is yours! Version 1.6, an update to version 1.5 on disk 532. Includes enhanced galaxy map, instant replay option, timed turns, symmetrical universe, and more. Binary only, shareware. Author: Michael Bryant

Convert Converts an object file to a C source which can be inserted with #include in your own programs. Version 1.0, includes source. Author: Frank Enderle

DosManager You can copy, delete, move, view, show pictures, play as samples, rename, ... files with this program. It is also possible to program a personal command with Dos Manager. This is version 1.0, shareware, binary only. Author: Jürgen Stöhr

Icons A bunch of 8-color icons for systems running AmigaDOS 2.0. Previously released 8-color icons from the author appeared on disk 213. Author: Wolf-Peter Dehnich

OctaMEDDemo Player program and sample songs for OctaMED, a special version of MED that can play 8 tracks at once on a standard Amiga without extra hardware. The sound quality is not as high as with 4 channel sound but is good enough for many purposes. Binary only. Author: AmigaDOS United

VTest A simple example how to test if the Amiga is infected by a Virus. It simply checks some vectors in the Exec Base structure and some library routines like DoIO. Version 1.0, includes source. Author: Frank Enderle

FredFishDisk534 Term Agh-wire telecommunications program written for AmigaOS release 2.0. Kickstart 37.14 and Workbench 37.33 or higher required. Kickstart 37.175 and Workbench 37.52 recommended. Features include total configurability, full ARexx control, Xpr-transfer support, filetype-identification after download, cut & paste point-and-click on screen, auto-up and download, scrollable review buffer of unlimited size, solid and fully featured VT100/VT220 ANSI emulation, optional fastatomic terminal emulation, hotkey support, powerful phonebook and dialing functions, auto save and print contents of the screen as IFF, ILM or ASCII file, full conversion and screen resolution support (new ECS screen modes included), asynchronous operation and a lot more. Comes with six Xpr-transfer libraries (ascii, modem, kermi, quickb, xmodem & zmodem) and documentation both in German and in English. This is version 1.8a and also includes the full C and assembly language source code. Author: Olaf Olsen Barthel

FredFishDisk535 Accent Universal accent character converter for Amiga, IBM-PC, Macintosh, and C64 files written in most West European languages (Danish, Finnish, French, German, Italian, Icelandic, Norwegian, Spanish, Swedish, and more). Works with either ASCII or Word Perfect files. This is a major update to version 1.5 on disk 454 (where it was called Vortex). New features include a graphical user interface, simple file reader, and copy option. Binary only. Author: Michel Laliberté

Arcl A utility that lists your ZOO, ARC and LZH archives with automatic file detection. Includes german version and documentation. Version 1.0, binary only. Author: Oliver Graf, T.O.M. Software

BizCalc A do-it-all user friendly loan calculator that calculates weekly and biweekly loans. Can generate amortization tables to the screen, to the printer, or to a file. Uses menus, buttons, or keyboard commands, and includes Has a decimal precision option and more. This is version 1.2, an update to version 1.1 on disk 493. Binary only. Author: Michel Laliberté

Flat A filing system handler which implements block-mapped filing devices such as available under Unix. Read and write calls are mapped to low-level system I/O operations which allow to treat devices such as dtd, dtd, ... rad, ... as big data files. These virtual files can be copied, read and written just like any standard AmigaDOS file. It is even possible to copy a whole disk with the CLIP/COPI command or to archive disks with LHArc and the like. Written as a supplement for the Amiga "tar" program. Version 1.3, includes source in C. Author: Olaf Olsen Barthel

Format A replacement for the Workbench 2.0 Format command with many additional features and a basic gdtio interface. Can be made resident and sports a number of additional command line options. Also included is a code fragment which will correctly initialize data media of any size (floppy disks or hard disk partitions) which works both under Kickstart 1.2/1.3 and 2.x. Version 1.1, includes source in C and assembly language. AmigaOS 2.x required. Author: Olaf Olsen Barthel

FracBlank A commodore screen blanker written for AmigaOS release 2.x. When running will blank the screen and start to draw a spiral plane fractal as described in the September 1986 issue of Scientific American. The resulting images may remind you of spiders, webs, lace or even the Chladian patterns formed by grains of sand strewn across a vibrating surface. Version 1.4, includes source in C and assembly language. AmigaOS 2.x required. Author: Olaf Olsen Barthel

Icon A tool which patches Workbench 2.x on line to supply default icons for about 45 different file types ranging from LHArc archives to object code files. Enhances the Show All Files option of Workbench which by default only knows

two types of file icons: Tool and Project. If enabled scans all files in a directory which do not have an icon file supplied and tries to determine their file types. When done, tricks Workbench into believing that there are proper icons for these files in the directory. Includes source in C and assembly language. AmigaOS 2.x required. Author: Olaf Olsen Barthel

KeyMacro A key board macro program, configurable via a text file, that also supports hotkey program execution. You can map up to eight functions to each key, including keys such as cursor keys, the return key, etc. Version 1.12 with a number bug fixes and enhancements, an update to version 1.8 on disk 436. Includes source in C and assembly language. Author: Olaf Olsen Barthel

SetBatt A tool to set the configuration information saved in the nonvolatile ram of the A3000 clock chip. Allows you to adjust the SCSI select timeout and other system settings. Includes source in C and assembly language. AmigaOS 2.x required. Author: Olaf Olsen Barthel

termLite A tiny, almost brain dead telecommunications program written for AmigaOS release 2.x. Can be made resident, supports cut & paste from console window, written as a simple interface to the serial parallel device driver. Version 1.0, includes source in C. AmigaOS 2.x required. Author: Olaf Olsen Barthel

FredFishDisk536 Chemesthetics Chemesthetics is a program that draws molecules using the calotte model. This means that atoms are drawn as bowls. Using this model, even extremely dangerous molecules like dioxine look quite nice. Chemesthetics has an intuition user interface, can save pictures as IFF files, and has many example files. This is version 2.06, an update to version 2.00 on disk 427. Includes source in C. Author: Joerg Fennel Metalwork

IncRev A small program for a maxfile or an imfile, to update revision numbers after each successful compile process. (Not related to but much more powerful than the increv program on disk 161 by Bryan Ford.) This is version 1.03, includes source in C. Author: Joerg Fennel Metalwork

PBlanker An enhanced Workbench 2.0 commodity, replacing "Blanker". Can blank screen and mouse pointer separately. This is version 37.04. Needs Kickstart 37.33. Binary only. Author: Bernd Weisling

WFile Small but useful tool to interchange ASCII files between different operating systems. Converts foreign symbols and adapts linefeed codes. Can also be used to expand tabs to multiple spaces or vice versa. It has builtin templates for interchange between the Amiga, MS-DOS and UNIX. Profiles can be used for common adaptations. Version 1.11, includes source in C. Author: Joerg Fennel Metalwork

FredFishDisk537 AntiBorder CLI window frame remover. Turns your CLI window into the largest possible borderless window that can be displayed on the Workbench screen. I.E. Creates a 80 x 32 character CLI window for standard PAL Amigas. Version 1.0, includes assembly source. Author: Paul Hayer

BootGames Two tiny games which fit on the bootblocks of a boot disk. BootOut is a Breakout style game and Squash is a squash type game (just like on those old TV games). BootOut V3.X and Squash V4.3. Includes assembly source. Author: Paul Hayer

CHIP8 CHIP8 is a programming language popularized by the RCA COSMAC VIP, DREAM 6800, and ETI-660 hobby computers. It is one step up from machine code (actual hex codes), yet allows the creation of some very simple, very small games. Version 1.1, includes assembly source and some demo games. Author: Paul Hayer

Cross A program that creates crossword puzzles. Has a message database to allow easy translation into almost any human language, with English and German currently supported. This is version 4.1, an update to version 3.3 on disk 464. Major new features are several new printer drivers including "generic" and "LaTeX", and many minor improvements. Includes source in M2 Amiga Module 2. Author: Jürgen Wehnelt

FO FastOptimizer is a new optimizer for AmigaDOS disks. It can optimize one disk in less than 2 min. 30 sec. FO supports Workbench or CLI modes and allows you to use unformatted disks as the destination. At least 1 Mb memory required. This is version 1.0. Includes some source in C. Author: Fabien Campagne

PaulCopy A single drive disk copier for Amigas with 1 Meg of RAM. Copies the source disk completely into memory in one go. Will also work with 512K Amigas, yet will require multiple disk swaps. Version 1.0, includes assembly source. Author: Paul Hayer

PBlanker An ultra tiny Screen-Blanker-Mouse-Blanker-Accelerator thingy. Is about 700 bytes and doesn't have to be RUN. Version 1.3, includes assembly source. Author: Paul Hayer

SMUSMDI Converts SMUS Files output by Electronic Art's Deluxe Music Construction Set into standard MIDI files that can be read by modern sequencing software. Version 1.0, includes sample data files and source in C. Author: Thomas E. Janzen

ZShell A very tiny (13Kb) CLI shell modeled along the lines of CSH, with over 400 internal commands. Some of its features include command line editing, history buffer, aliases, function key aliases, reverse polish calculator, multiple commands on one line, loops, if-Else-Endif constructs etc. This is version 1.30 and includes assembly source. Author: Paul Hayer

FredFishDisk538 BCBMusic This is the second set of original music in the BCBMusic series. This set includes the songs "Still Waiting", "Transpose", and "Trilogy". Like the first set (on disk 428), no player program is required since it is actually compiled in with the song. These new songs include a new equalizer style graphic display which can be toggled on and off. WB2.0 compatible, binary only. Author: Brian C. Berg

MatLabPatch Patches for both MatLab and Digilab on the new version of Digilab compiled for 68000 machines has some incorrectly compiled modules (compiled for 68020) and therefore causes crashes on 68000 machines. The Plot sub module compiled for 68000 machines in the MatLab archive was linked using the incorrect Digilab and does not run on 68000 machines. This update provides correctly compiled replacements for both those files. Author: Jim Locker

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NGTC Release Two, Revision 1, of a trivia game based on "Star Trek: The Next Generation" TV series. This is a bug fix containing a new game mode. You also need Release Two from disks 506 and 507, and Release One from disks 404 and 405. Created with The Director Version 2. Binary only. Author: Gregory Epley

FredFishDisk539 DT A "Disk Test" utility for floppy disks, is Norton Utilities. V1.12, includes source (SAS-C). Author: Maurizio Loreti

PF A CLI Workbench interface to control an Hewlett-Packard DeskJet 500 printer. The goal of SimpleRexx is to make adding at least the minimum level of ARexx support to an application a trivial task. Includes source. Author: Michael Sinz

RPN An emulation of an Hewlett-Packard pocket computer on your screen. Version 1.00, includes source (SAS-C). Author: Maurizio Loreti

SimpleRexx A set of routines that handle the low level ARexx work for you in such a way as to have your application work with or without ARexx on the target system. The goal of SimpleRexx is to make adding at least the minimum level of ARexx support to an application a trivial task. Includes source. Author: Michael Sinz

Uedit A nice shareware editor with learn mode, a command language, menu customization, hypertext, online help, a teach mode, split windows, copy and paste, undo, features. This is version 2.6h, an update to version 2.6e on disk 471. Binary only. Author: Rick Stiles

VLTimer A clock timer window that sticks on the VLT screen (or on the Workbench) to check connection times (and costs). V1.02, includes source (SAS-C). Author: Maurizio Loreti

FredFishDisk540 Browser A "Programmer's Workbench". Allows you to easily and conveniently move, copy, rename, and delete files & directories from a CLI environment. Also provides a method to execute either Workbench or CLI programs by double-clicking them or by selecting them from a Pull-Menu with lots of arguments. A Browser 1.6 replace ment, does everything Browser 1.6 does and a lot more. Version 1.0, includes source in C. Author: Sylvain Rougier, Pierre Carrette

CLIEat An XIcon style program which uses parm library. It allows you to execute a script starting from WB and is completely CLI compatible, because it is a CLI. Can use a real script file or take commands in its own TOOL TYPES. Includes source in C. Version 1.0. Author: Sylvain Rougier

ParamMenu ParamMenu allows you to build menus to run whatever program you have on a disk. Param can run programs either in Workbench or CLI mode. This is an alternative to MyMenu which can run only when workbench is loaded. Param can have its own little window, can attach menus to the CLI window you are running from, or to the WB menus, just like MyMenu. This is version 3.00, an update to version 2.5 on disk 419. Includes source in C. Author: Sylvain Rougier, Pierre Carrette

PatchReq A patch for system requesters and ar file requester. Replaces ar file requester with the greatest library file requester. Patches AutoRequest for requesters to appear under the mouse and more. Version 1.4, includes source in C. Authors: Sylvain Rougier, Pierre Carrette

Req An enhanced version of the interface to req library for Aztec C 5.0. Pragmas supplied and glue put in a library rather than in an object file. Includes source in asm. Version 1.1. Author: Pierre Carrette

SANA Release 2 of the Standard Amiga Network Architecture device driver specification. This is a specification for the device driver level only. Author: Raymond Brand, Martin Hunt, Perry Kivowitz

SetColors A palette replacement program that does a lot more in only 3K. Can save and load color files, and update preferences. Update to version on disk 419, with bug fix. Includes source in C. Author: Pierre Carrette

WBRun A RunBack style program which uses parm library. Runs programs in WB mode from any CLI. Programs are fully detached. The program you run must support WB startup. Not related to WBRun on disk 43. Includes source in C. Authors: Sylvain Rougier, Pierre Carrette

To Be Continued.....

In Conclusion To the best of our knowledge, the materials in this library are freely distributable. This means they were either publicly posted and placed in the public domain by their authors, or they have restrictions published in their files to which we have adhered. If you become aware of any violation of the authors' wishes, please contact us by mail.

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And furthermore...

Designing with the Amiga

by Timothy Duarte

Once again, the Amiga computer is playing an important role in another business. Randy Lieu & Jim Silks, an illustration/design team in New York, regard the Amiga as a valuable and effective tool which helps the creation process of their work.

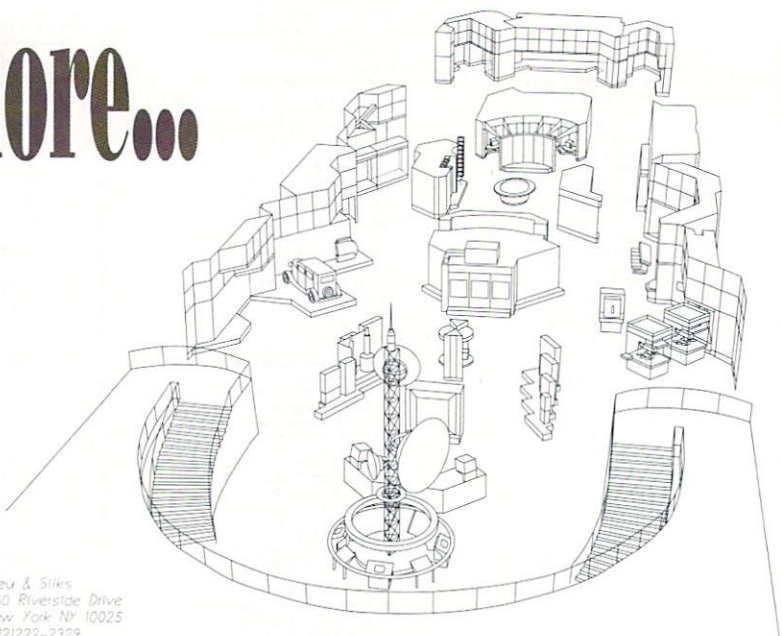
A number of Lieu & Silks' architectural views and perspective/axonometric maps of some prominent locations have appeared in brochures and visitor's guides. In a recent interview with AC, Jim Silks talked about the Amiga and their project for The Motorola Museum of Electronics, in Schaumburg, IL. His 3-D modeling and drawing program of choice was Gold Disk's *Professional Draw*. The views were first created with Oxxi/Aegis' *Modeler 3D* and *Videoscape 3D*. After the best view was chosen, *Professional Draw* was used to trace the view. Lieu & Silks have also completed projects of the Madison Square Garden Club, Central Park, The South Street Seaport, and the Sarah Lawrence College Campus. Jim

stated that the Central Park and Sarah Lawrence College projects were created before the Amiga was available. These projects convinced Lieu & Silks to implement computer modeling programs in their future work. Over the last few years, all of their work has been produced on their three Amigas.

When asked about other computer programs, Jim said he prefers *Professional Draw* over the other illustration programs on the market because the white silhouettes of deselected curve controls permit more skillful use of bezier curves. They also use *Professional Page* and Mirror Image Productions' *MIFont* for their desktop publishing needs.

It wasn't too surprising to discover this talented team's work in other avenues beyond architecture. Their illustrations were used for *The IBM Ergonomics Handbook* and *Reader's Digest New Do-It-Yourself Manual*. They've also created art for a number of logos, including the logo for the American Express/Optima credit card.

Lieu and Silks have been working together since 1976. The addition of the Amiga computers has not only made their work easier, but has helped them "map" the route to success. For more information, contact: Lieu & Silks, 250 Riverside Drive, New York, NY 10025, (212) 222-2329.

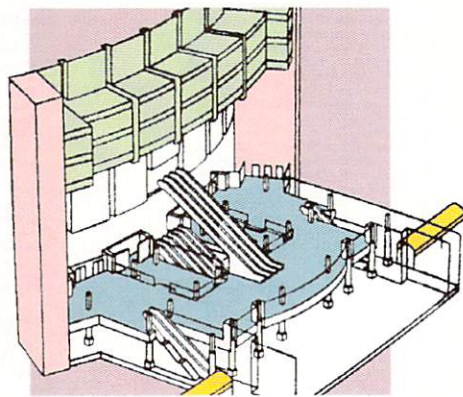
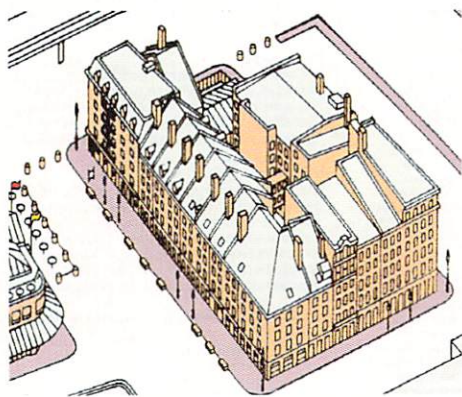


Lieu & Silks
250 Riverside Drive
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(212) 222-2329

Above: The interior of the Motorola Museum. This perspective map, drawn with *Professional Draw*, appears in the museum's visitor's guide.

Left: An axonometric map of The South Street Seaport, drawn with *Professional Draw*.

Below: The mezzanine in Madison Square Garden's Sky Lobby, drawn with *Professional Draw*.



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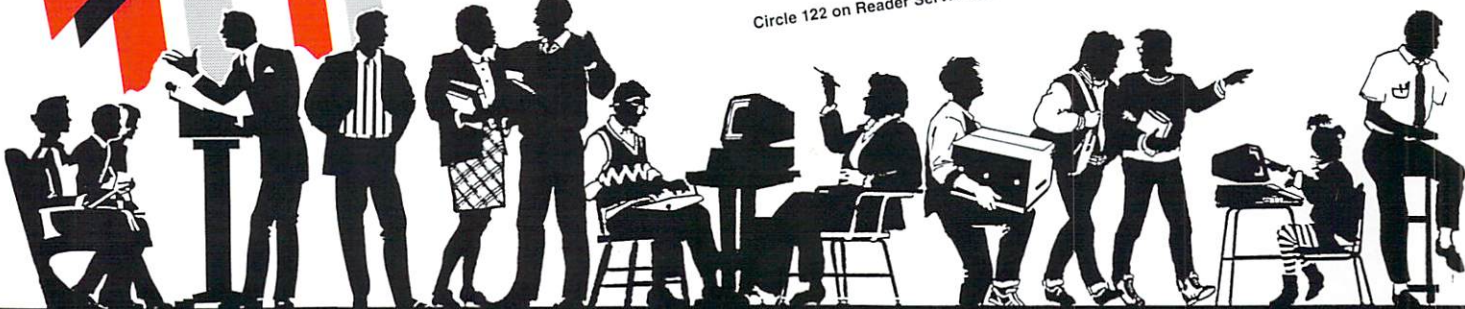
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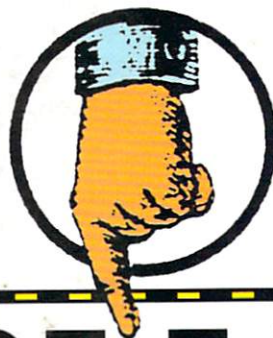
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